SOUTH FLORIDA REGIONAL TRANSPORTATION AUTHORITY

SOUTH FLORIDA REGIONAL TRANSPORTATION AUTHORITY TRANSIT DEVELOPMENT PLAN FY 2005 - 2010

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Executive Summary

SOUTH FLORIDA REGIONAL TRANSPORTATION AUTHORITY

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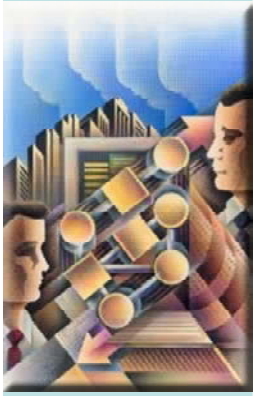


Introduction

The South Florida Regional Transportation Authority (SFRTA) / Tri-Rail Transit Development Program (TDP) is a short range plan, covering the years 2006 through 2010 and addressing Tri-Rail's operational and capital improvements. SFRTA operates a 72 mile commuter rail system that runs north-south through Palm Beach, Broward and Miami-Dade Counties' southeastern coast. SFRTA also operates a shuttle bus system taking patrons to and from the stations within the region.

In 1990, the Florida Legislation enacted Section 341.052, Florida Statutes, which established a Block Grant Program to be administered by the Florida Department of Transportation. The State requires the preparation of a TDP for any transit property that receives Public Transit Block Grants. Florida Statutes require that TDP address the following elements:

The SFRTA / Tri-Rail TDP is a short range plan

- Community goals and objectives
- The need for transit
- Opportunity provided for public input
- Analysis of transit available
- 5-year plan of improvements
- 5-year budget

This is the first TDP prepared by SFRTA.

Goals and Objectives

The development of the goals and objectives reflects the needs and visions developed in meetings with the public and SFRTA staff through the TDP development effort. These needs and visions are used to develop a framework for SFRTA operations and facility development for the period covering 2006-2010. These goals and objectives listed below are consistent with the Tri-Rail 2020 Long-Range Master Plan and Comprehensive Plans/programs from local municipalities.

- Goal 1: to develop a cost effective transit system by establishing intelligent technologies with monitoring systems, maintenance programs, and integrating the I-95 Intelligent Traffic Systems system. These new technologies can also be used for improved SFRTA operations and facilities.
- Goal 2: to expand system facilities and operations by expanding bus feeder service to more activity centers and Tri-Rail service in weekday evenings and weekends; as well as extending its rail system to the north and south.
- Goal 3: to increase intergovernmental coordination to improve all transit connections to Tri-Rail stations. This coordination will also improve the efficiency of Tri-Rail operations with CSX, Amtrak, and other freight lines.
- Goal 4: to expand funding opportuni-

The tri-county area of South Florida has experienced a 25% population growth since 1990

Ridership has grown by over 25% during the last five-years with most riders going to and from work

ties for the SFRTA system by pursuing future transportation funding program initiatives on local, state, and federal levels.

- Goal 5: to increase customer safety, convenience and comfort by providing additional station amenities, security personnel, and to create more opportunities for public involvement with SFRTA operations.

Operating Environment

Tri-Rail began commuter rail services in 1989 as a temporary mitigation measure for the reconstruction of I-95. It has remained in operation and has become a critical part of the transportation in South Florida mainly because of the congestion on I-95. The system consists of 18 stations between Mangonia Park, north of West Palm Beach, and Miami International Airport. The rail right-of-way lies immediately adjacent to I-95, from Mangonia Park to the Golden Glades Interchange in Miami-Dade. At this point, the rail line curves to the southwest to a point that is four miles west of I-95. The line, originally, was a single track with extensive sidings. Currently, the system is being double tracked under a Full-Funding Grant Agreement (FFGA) from the Federal Transit Administration (FTA). This double tracking will be completed in March 2006.

Tri-Rail began commuter rail services in 1989

The tri-county area of South Florida has experienced a 25% population growth since 1990. The areas in and around Miami have a significantly higher percentage of individuals living below the poverty level. Of the total home-to-work transit trips within the tri-county region, 36% of the trips take over one hour and 25% of the transit trips take less than 30 minutes. The shortest travel times by transit for the home-to-work trip are West Palm Beach and Boca Raton. The longest travel times by transit occur for trips originating in Lake Worth (with 40% of transit trips taking over 1 hour) and Miami (with 38% of transit trips taking over 1 hour.)

Considering the length of the Tri-Rail corridor, there are relatively few public facilities such as schools and other institutional facilities within ½ mile of a Tri-Rail station. Along the entire Tri-Rail corridor from south (Miami-Dade County) to north (Palm Beach County) land uses become less dense and less industrial as the corridor nears its northern terminus at Mangonia Park. Land uses around the stations are primarily industrial with pockets of residential areas. Urban blight is more extensive in the southern segment of the rail corridor where development densities are the highest. Transit feeder service to Tri-Rail stations is provided by a combination of service by the three local county operators - Miami-Dade Transit (MDT), Broward County Transit (BCT), and Palm Tran and by shuttle buses operated directly by the SFRTA. SFRTA transfers $666,660 annually to each county to operate Tri-Rail feeder routes.

Despite the ongoing construction in the South Florida Rail Corridor (SFRC) tracks and the fact that no additional service has been added, ridership has grown by over 25% during the last five-years with most riders going to and from work.

Growth in Boarding

County	2000 Daily Boardings	2004 Daily Boardings	% Growth
Palm Beach	3,066	4,007	30.7%
Broward	2,468	3,107	25.9%
Miami-Dade	1,975	2,378	20.4%
Total	7,509	9,492	26.4%

Passenger Surveys

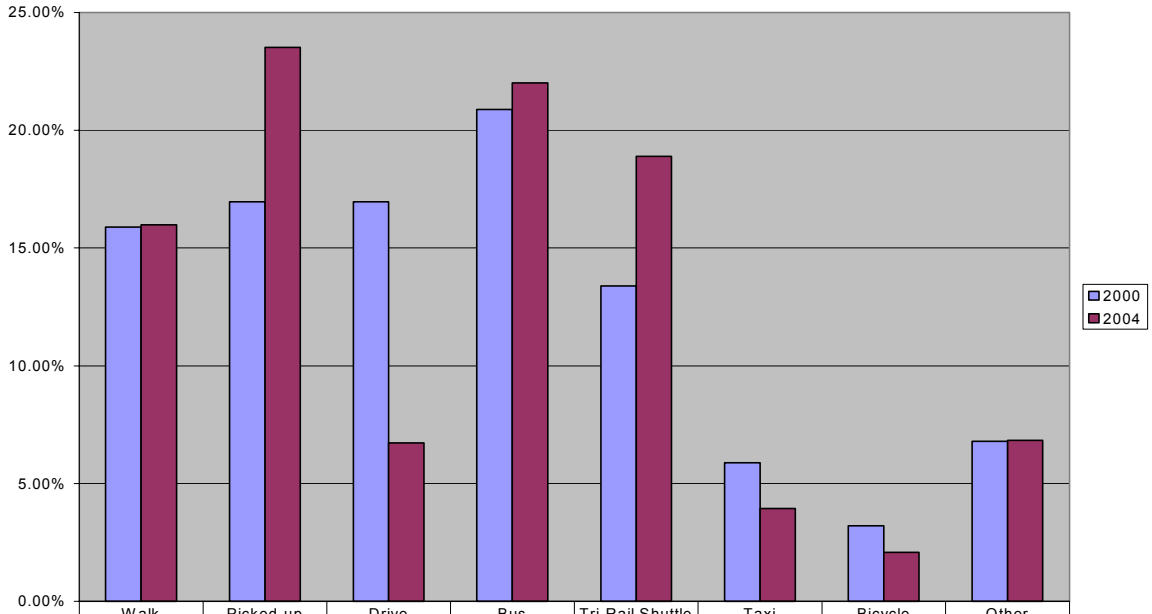
Over 900 Tri-Rail patrons were surveyed in December 2004. (See table to the right).

Since 2000, the typical Tri-Rail commuter has changed dramatically. In 2000, Tri-Rail reflected large numbers of choice riders with 19% of the riders earning $51,000 to $75,000 annually. In 2004 that number had dropped by 8% and the largest group of Tri-Rail patrons had become those individuals earning less than $25,000, who would normally be considered captive riders. In 2000, the typical Tri-Rail patron was Caucasian, middle-aged, male executive, with a college degree. The typical Tri-Rail patron is now a male Hispanic with a high school diploma earning under $25,000 per year.

Boardings and Alightings by Station

Tri-Rail Stations	Origins		Destination	
Station	Origin Rank	2004 AM Boardings	Destination Rank	2004 AM Alightings
Fort Lauderdale	1	261	5	188
Hollywood	2	232	10	115
Metrorail Transfer	3	222	1	369
Cypress Creek	4	174	4	199
Lake Worth	5	169	13	83
Golden Glades	6	166	14	77
Pompano Beach	7	154	6	153
West Palm Beach	8	144	3	239
Deerfield Beach	9	142	8	145
Boynton Beach	10	139	15	73
Miami Airport	11	124	7	147
Fort Lauderdale Airport	12	115	9	127
Delray Beach	13	112	11	112
Sheridan Street	14	110	16	67
Boca Raton	15	97	2	274
Mangonia Park	16	81	12	109
Opa-Locka	17	74	18	32
Hialeah Market	18	32	17	42

Mode of Transit from Stations to Final Destinations



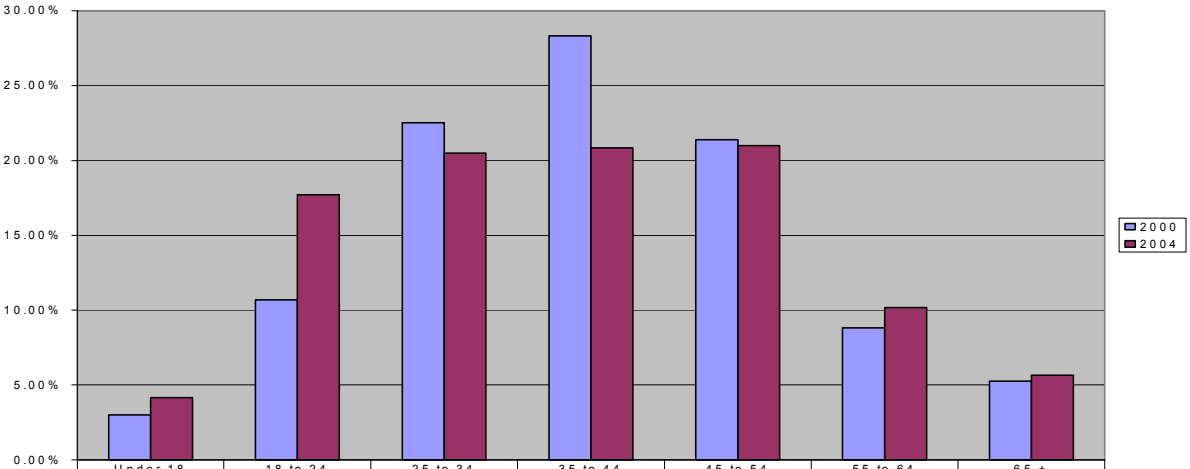
	Walk	Picked-up	Drive	Bus	Tri-Rail Shuttle	Taxi	Bicycle	Other
2000	15.89%	16.96%	16.96%	20.89%	13.39%	5.89%	3.21%	6.79%
2004	15.99%	23.52%	6.72%	22.02%	18.89%	3.94%	2.09%	6.84%

Since 2000, the typical Tri-Rail commuter has changed dramatically

The Deerfield Beach, Ft. Lauderdale Airport, and Miami International Airport stations had the heaviest shuttle uses at 39%, 38%, and 34%, respectively

The number of people driving had dropped by 10%. There was a 5% rise in the number of people taking Tri-Rail shuttles to their destinations. The Deerfield Beach, Ft. Lauderdale Airport, and Miami International Airport stations had the heaviest shuttle uses at 39%, 38%, and 34%, respectively.

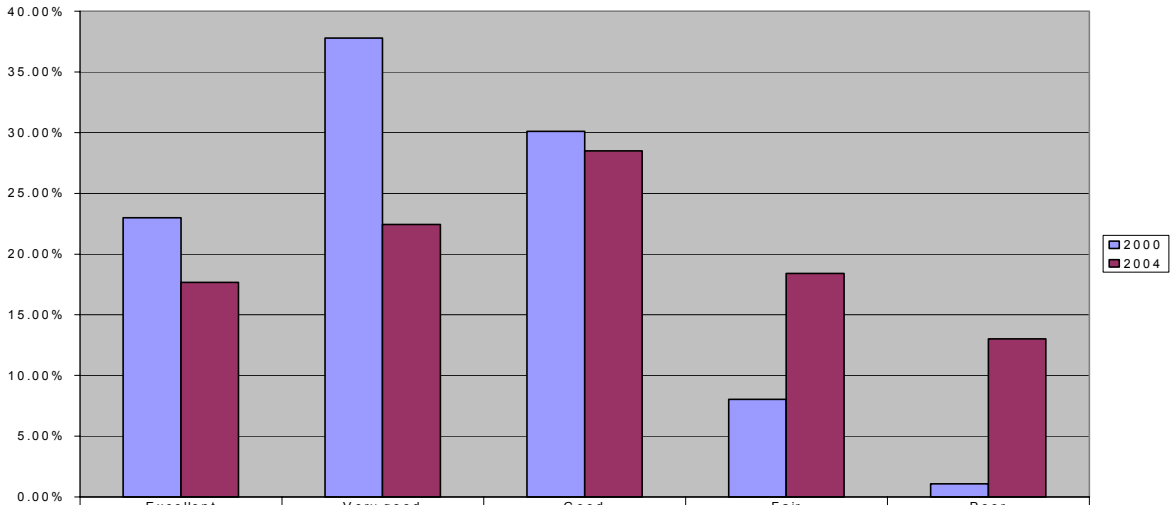
Ages of Tri-Rail Patrons



	Under 18	18 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 +
2000	3.00%	10.69%	22.51%	28.33%	21.39%	8.82%	5.25%
2004	4.15%	17.71%	20.48%	20.85%	20.98%	10.18%	5.65%

In 2000, the largest group of Tri-Rail patrons was between the ages of 35 to 44 which is usually the highest income group. In 2004, the dominant age group had shifted toward younger riders between 18 and 24.

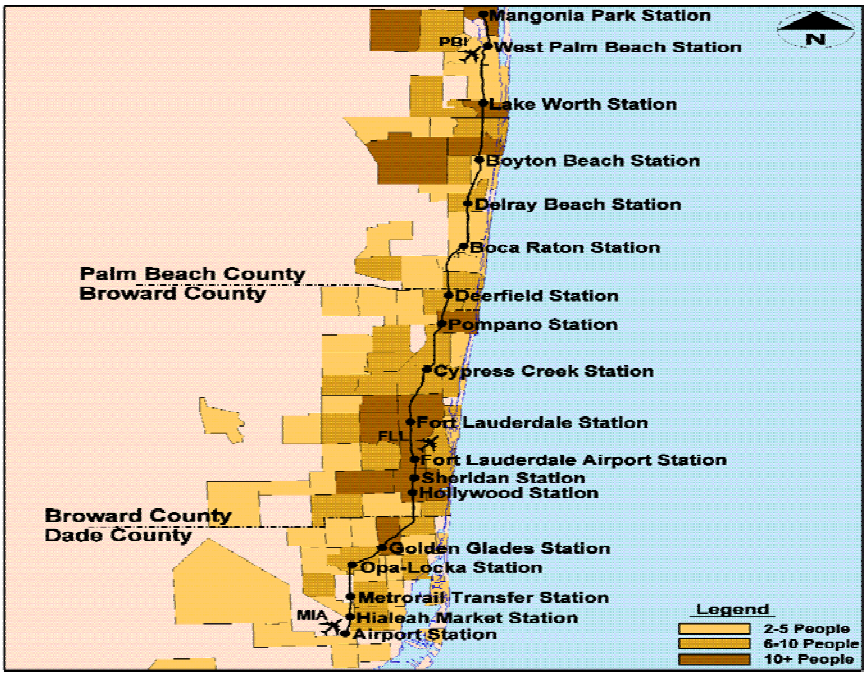
Overall Satisfaction with Tri-Rail



	Excellent	Very good	Good	Fair	Poor
2000	22.99%	37.79%	30.12%	8.02%	1.07%
2004	17.66%	22.43%	28.49%	18.42%	13.00%

Many patrons rated Tri-Rail with a good or very good customer service rating. There was a minor negative shift in this category as a spill-over effect of the on-time performance issue.

Origin of Riders



The primary origin of patrons shifted from Palm Beach to Broward County. The importance of the stations in the center of the system (Hollywood and Fort Lauderdale) became more pronounced as the end stations lost some of their dominance.

Survey Comments

Over 900 Tri-Rail patrons were surveyed. This is a summary of some of the most significant comments received:

- There is a need to improve the on-time performance, the frequency of trains and running times, and the addition of trains at midday and at night.
- Additional station attendants, space on trains for luggage, maps at stations, and ticket machines accepting all credit cards.
- Snack machines and food service on trains, comfortable seats, and cleaner toilets and restrooms at the stations and on trains.
- Improved bus service and bus transfers.
- Buses need to wait for late trains.
- Tri-Rail shuttle buses need to meet transit schedules.

Over 900 Tri-Rail patrons were surveyed

During the period between February 28 and March 8, 2005 a series of community meetings were held at different Tri-Rail stations and bus terminals in the tri-county area. The public was presented with the SFRTA Double Track Project and was asked for additional recommendations and projects that should be considered for the SFRTA TDP. This is a summary of the results:

- Better on-time performance, bus service at stations, and coordination between bus companies and Tri-Rail
- Trains every half hour and faster running times
- Run trains at midday, later at night, and express buses from Ft. Lauderdale to Downtown Miami
- Increase weekend service and additional cars during the week
- Accessible bus connections at the Hollywood, Cypress Creek and Sheridan Street stations.
- Buses to match new Tri-Rail schedule
- Expand Tri-Rail service north and south

Many patrons rated Tri-Rail with a good or very good customer service rating

The Authority's mission is to coordinate, develop and implement a viable regional transportation system in South Florida that endeavors to meet the desires and needs for the movement of people, goods and services

Performance Evaluation

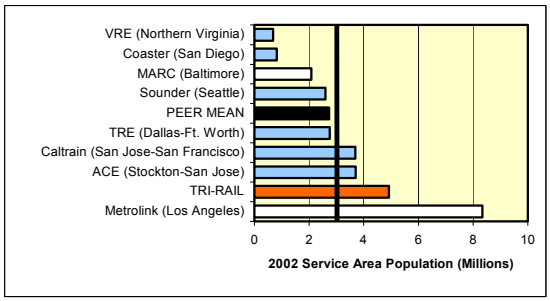
This section presents a commuter rail peer group and 1998-2002 trend analysis of the performance measure categories. The peer group analysis compares SFRTA's 2002 Tri-Rail performance to the performance of other comparable commuter rail operators. The trend analysis provides a five-year look at changes in SFRTA performance and compares those changes to trends within the peer group as a whole. The other comparable rail operators are:

- **Altamont Commuter Express (ACE)** - Stockton to San Jose, California regions
- **Caltrain** - San Francisco and San Jose, California regions
- **Coaster** - San Diego region
- **Sounder** - Seattle-Tacoma, Washington region.
- **Trinity Railway Express (TRE)** - Dallas-Fort Worth region
- **Virginia Railway Express (VRE)** - Northern Virginia and Washington D.C.

Two larger operators, in terms of the number of routes operated, are also shown in the graphs in this section, but are not included in the peer averages. MARC operates three routes in the Baltimore-Washington region. Metrolink operates seven routes in the greater Los Angeles area. These agencies are included to provide comparative results of agencies somewhat larger than Tri-Rail's current size.

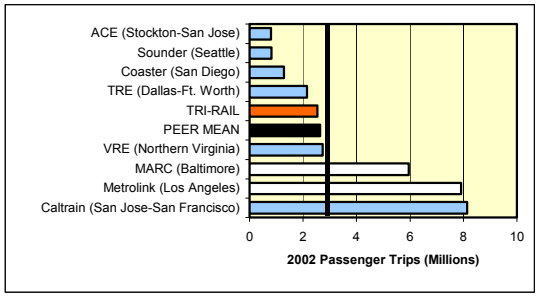
Service Area Population

SFRTA's 2002 reported service area population of 4.9 million was the highest among the peer systems and about 80% higher than the peer average. SFRTA's service area population increased by 9% over the five-year period.



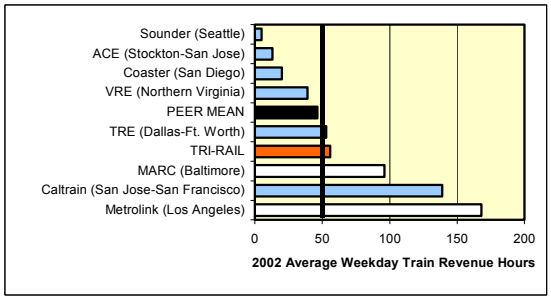
Annual Unlinked Passenger Trips Comparison

Tri-Rail's annual ridership has fluctuated around 2.35 million per year.



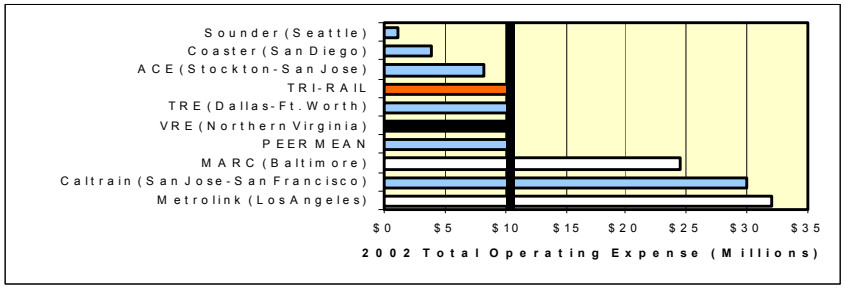
Average Weekday Train Revenue Hours

Tri-Rail's average weekday vehicle miles did not change from 1998 to 2002 and operated 20% more hours than the peer group average.



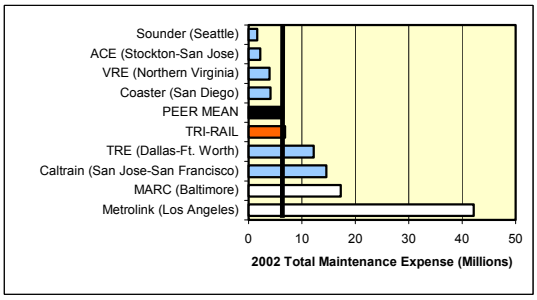
Operating Expenses

This measure is the sum of all expenses involved with operating vehicles. Tri-Rail's operating expenses declined 3% from 1998 to 2002, while the number of passenger car revenue miles operated declined 12%.



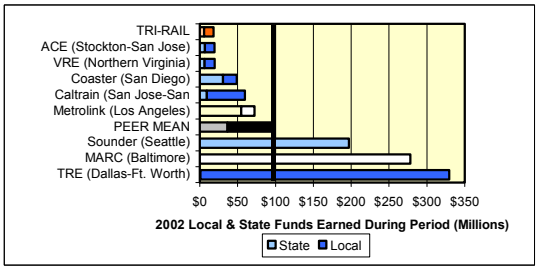
Total Maintenance Expense

Tri-Rails maintenance expenses increased 9% from 1998 to 2002, while the number of passenger car revenue miles operated declined 12%.



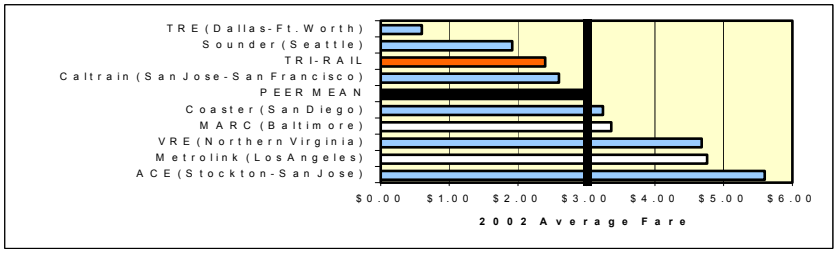
State and Local Revenue Comparison

Tri-Rail's state and local revenue increased by 35% from 1998 to 2002.



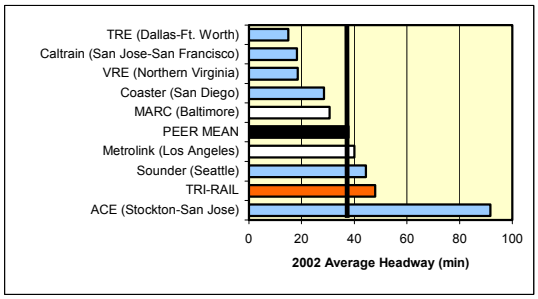
Fare Increases

Tri-Rail's average fare increased 14% from 1998 to 2002 (to $2.38), while the peer group average increased 21% (to $3.00).



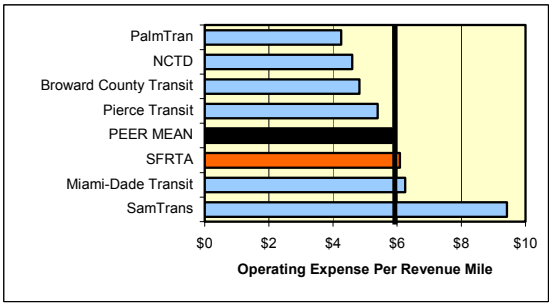
Average Headway Comparison

Tri-Rail's average headway remained steady at 48-49 minutes between 1998 and 2002.



Operating Expense Per Revenue Mile - Feeder Bus

SFRTA's cost per revenue mile is $5.93.



Tri-Rail annually transports more than 2.5 million riders to the region's corporate and business centers, three international airports, unique local attractions and special events

The TDP identifies current budgeted funds and many of the projects that are planned for implementation in the next five -years

The TDP meets all of the requirements specified by the Florida Statutes for a TDP and thus makes the SFRTA eligible to receive the State Public Transit Block Grant

TDP Program

During the first year of 2006-2010 TDP, construction will be completed on the Segment 5 - Double Tracking Project allowing for a major increase in service. Tri-Rail operations will increase from 28 trains per day to 48 trains per day. With the increase in train operations there will need to be a corresponding improvement to station access. Most importantly is the need to provide feeder bus and shuttle bus service to the Tri-Rail stations to meet the new schedule. The provision of this service will be the combined responsibilities of the SFRTA, Palm Tran, Broward County Transit and Miami-Dade Transit. The TDPs of each of these agencies address this issue and identify improvements that will be needed to meet the additional service being provided by Tri-Rail. The TDP is a needs document - not a programming or budgeting document. Therefore, continued coordination will be required to determine the how the additional feeder service and shuttle service will be operated and funded.

Tri-Rail operations will increase from 28 trains per day to 48 trains per day

The TDP identifies current budgeted funds and many of the projects that are planned for implementation in the next five -years, including:

- Additional rail vehicles
- Improving vehicular access to several stations
- Upgrading all stations to Segment 5 - Double tracking standards
- Providing new ticket machines
- Implementing the Smart Card system

The adoption of this TDP will make a new source of funds available to the SFRTA. It is anticipated that SFRTA will receive $469,000 from the State Public Transit Block Grants. State statutes clearly state that these block grant funds may be used for:

- the capital cost of public bus transit and local public fixed guideway projects;
- the operating cost of public bus transit, or;
- the cost of service development of public bus transit.

The TDP also begins to examine some the projects that might be funded by the FDOT Strategic Intermodal System (SIS) Plan Funds. The State has merged many of its funding programs into one large program called the SIS. The SIS consists of statewide and regionally-significant facilities that move both people and goods. The Tri-Rail corridor is identified in the SIS as a connector and the stations are identified as hubs. As such, these facilities are eligible for SIS funding. In 2004-2005, $100 million of funds were allocated to 36 SIS projects that were production ready. Identification of projects in the TDP may be the first step in receiving SIS funding.

Conclusion

Despite several years of construction, Tri-Rail ridership has grown by 25% during the last five years and recent detailed surveys show that rider satisfaction and loyalty is high.

This 2006-2010 SFRTA TDP lays out the projects necessary to complete and supplement the Segment 5-Double Tracking Program. It meets all of the requirements specified by the Florida Statutes for a TDP and thus makes the SFRTA eligible to receive the State Public Transit Block Grant. The TDP also sets up several projects that should be considered for future SIS funding.

After adoption of this TDP, SFRTA will continue to coordinate the provision of feeder bus and shuttle bus service to the stations along the corridor.

SFRTA 2006-2010 TDP Suggested Projects Required to Support Double Tracking

One Additional Bus to Serve Park of Commerce from Boca Raton Station
One Additional Bus to Meet 20-min Headways on Boca Center Shuttle at Boca Station
One Additional Bus & Merge Deerfield Buses 1 & 2 to Meet 20-min Headways
Two Additional Buses on Palm Beach (PB1) route to meet 20-min Headways at Station
One Additional Bus to Meet 20-min Headways at Cypress Creek
One Additional Bus to Meet 20-min Headways on Ft Lauderdale Airport Shuttle
One Additional Bus to Meet 20-min Headways on the SF Education Center Bus
Cypress Creek Intermodal Facility (Westside)
Delray Beach Station passenger amenities and access improvements
Ft. Lauderdale Airport Station passenger amenities and access improvements
Upgrade Pompano Beach Station
Ft. Lauderdale Station passenger amenities and access improvments
Access Improvements at Boca Raton, Deerfield Beach, and Boynton Beach Stations
79th Street Station Metrorail Connection Improvements

Despite several years of construction, Tri-Rail ridership has grown by 25% during the last five years

After adoption of this TDP, SFRTA will continue to coordinate the provision of feeder bus and shuttle bus service to the stations along the corridor

1. GOALS AND OBJECTIVES

1.1 Introduction

This chapter presents the goals and objectives that have been developed for the SFRTA 2005-2010 Transit Development Plan (TDP), based upon the needs and visions set forth by the public and the SFRTA. The goals and objectives presented in this chapter provide the necessary framework to guide future decisions on SFRTA operations and facility development. The overall goal of this planning effort is to further establish SFRTA as a viable and sustainable form of transportation within the South Florida community.

The development of the goals and objectives are a direct reflection of the needs and visions that have been expressed during meetings with the public and SFRTA staff, as part of the TDP development effort. The goals and objectives are also consistent with those identified in the Tri-Rail 2020 Long-Range Master Plan. In addition, a review of the goals and objectives in the TDP for Miami-Dade, Broward and Palm Beach Counties were conducted to insure that the goals and objectives presented were a result of a comprehensive approach and consistent with local plans and programs. Table 1-1 identifies the goals presented in this chapter and from the 2020 SFRTA Master Plan and the County TDP's. It must be noted that the Miami-Dade Transit TDP does not contain goals or objectives, therefore it is not included in the table below.

Table 1-1
Goals Overview Matrix

	BROWARD COUNTY TDP	PALM TRAN TDP	TRI-RAIL LONG RANGE 2020 PLAN	SFRTA TDP 2006-2010
COORDINATION	*Goal 1:* Enhance local and regional transit connectivity *Goal 2:* Implement transit capital improvements that support the County's land use and development goals	*Goal 1:* Coordinate with state and local government and transportation agencies to integrate transit needs into the Land Use Planning and Development Process *Goal 2:* Intergovernmental coordination	*Goal 1*: Coordinate with local agencies to develop transit supportive polices	*Goal 1:* Improve Intergovernmental Coordination
OPERATIONS AND PERFORMANCE	*Goal 1:* Increase ridership within existing transit service areas through cost-effective transit improvements	*Goal 1:* Consistently provide effective and efficient transportation services to the residents and visitors of Palm Beach County *Goal 2:* Improve the quality of fixed-route services *Goal 3:* Improve Palm Tran's image as a viable transportation alternative for the community *Goal 4:* Pursue the most cost-effective means of providing ADA complementary paratransit services to eligible customers in the community *Goal 5:* Pursue technological advancements to improve efficiency, effectiveness and safety	*Goal 1:* Expand services to meet South Florida's travel needs *Goal 2:* Fully integrate Tri-Rail into local and statewide transit systems	*Goal 1*: Expand system facilities and operations *Goal 2*: Increase customer safety, convenience and comfort

Table 1-1 (Continued)
Goals Overview Matrix

	BROWARD COUNTY TDP	PALM TRAN TDP	TRI-RAIL LONG RANGE 2020 PLAN	SFRTA TDP 2006-2010
RESOURCES	*Goal 1:* Develop cost effective transit alternatives *Goal 2:* Increase funding opportunities for Broward County Transit services	*Goal 1:* Identify and pursue additional fiscal and human resources to implement this transit development plan	*Goal 1:* Expand funding base for Tri-Rail	*Goal 1:* Develop Cost Effective Transit System *Goal 2:* Expand funding opportunities for SFRTA System

1.2 Goals and Objectives

Goal 1: Develop Cost Effective Transit System

Objectives:

- Establish a performance monitoring system for Tri-Rail and feeder bus operations and any new line-haul bus operations.
- Establish a preventive maintenance program for SFRTA facilities and vehicles.
- Identify strategies to employ cost saving measures related to daily SFRTA operations.
- Implement intelligent technologies associated with SFRTA operations and facilities, including integration of the I-95 ITS system.
- Seek opportunities to employ high school and college students as cost-effective and learning opportunities.

Goal 2: Expand System Facilities and Operations

Objectives:

- Reduce Tri-Rail headways and feeder bus headways on high demand routes.
- Expand Tri-Rail feeder bus operations to improve the interconnections between Tri-Rail stations and major South Florida land uses, including the downtown areas, airports, employers, colleges and beaches.
- Expand Tri-Rail feeder bus service hours to include weekday evenings, as well as weekends.
- Seek opportunities to expand the Tri-Rail fixed rail system to serve additional corridors, including completing planning/engineering for the Jupiter and Scripps extensions.
- Develop a strategy for implementation of regional "premium" bus service spanning County boundaries.
- Establish new operation and maintenance facilities to enhance Tri-Rail's performance capabilities.

Goal 3: Improve Intergovernmental Coordination

Objectives:

- Work with local governments and private transit providers to coordinate regional transit services with Tri-Rail operations, including feeder buses and paratransit.
- Work with local governments to improve multi-modal facilities, plans and connections to Tri-Rail stations.
- Coordinate with other rail users including CSX, other freight lines and Amtrak to allow for more efficient Tri-Rail operations.

- Pursue opportunities for transit-oriented developments on or near Tri-Rail Station property owned by SFRTA.
- Coordinate with local governments to develop and apply economic development and land use initiatives to attract transit-oriented development around Tri-Rail stations.
- Coordinate with local governments to identify the needs of disadvantaged populations.
- Coordinate with the Workforce Development Boards of the three counties to insure service is supportive of their work force development programs.

Goal 4: Expand Funding Opportunities for the SFRTA System

Objectives:

- Pursue participation in all future local transit or transportation funding initiatives.
- Pursue participation in state and federal funding programs, including the new State Strategic Intermodal System (SIS) and the federal transportation reauthorization.
- Seek public-private joint ventures to expand the Tri-Rail system, including employer participation in Tri-Rail feeder bus service and local government participation in facilities development.
- Identify opportunities to create joint ventures with local community and economic development initiatives.

Goal 5: Increase Customer Safety, Convenience and Comfort

Objectives:

- Improve safety and security on Tri-Rail at stations and on feeder buses.
- Provide improved station amenities including restrooms, drinking fountains and other amenities that encourage ridership and comfort for passengers.
- Identify new marketing opportunities and expand customer service programs.
- Provide opportunities for public input and evaluation in the provision and expansion of SFRTA operations and facilities.
- Provide better signage directing people from Tri-Rail park and ride lots to Tri-Rail Stations.

SFRTA Performace Measures:

1. Tri-Rail will maintain a 95% end-to-end on-time performance goal once double tracking is complete. RTA currently maintains Tri-Rail on-time performance and reports that information to its board every month.

2. With the move to 48 trains per day in March 2006, a Tri-Rail shuttle shall meet each peak hour train at stations whre service is contracted. The RTA will maintain a service goal of providing 10-minute meets for contracted bus service.

3. The SFRTA will work with County transit agencies to provide a line-haul bus within 10 minutes of each Tri-Rail peak period train. Prior to any Tri-Rail schedule change, the RTA will examine posted bus schedules and work with the county transit agencies on schedule adjustments to meet the 10-minute meet goal. The results of that analysis will be provided to the RTA Board and the RTA Public Transit Advisory Committee for review and recommendations for improving the connections, as necessary.

2. OPERATING ENVIRONMENT

2.1 The SFRTA Network

The South Florida Regional Transportation Authority (SFRTA) operates a 72 mile commuter rail system (Tri-Rail), as well as the shuttle bus system. The system consists of 17 stations between Mangonia Park, north of West Palm Beach and Miami International Airport. The rail right-of-way lies immediately adjacent to I-95, from Mangonia Park to the Golden Glades Interchange in Miami-Dade, at which point the rail line curves to the southwest to a point that is four miles west of I-95. The line, originally, was single track with extensive sidings. The line is currently being double tracked under a Full-Funding Grant Agreement (FFGA) from the Federal Transit Administration (FTA). Tri-Rail covers a considerable distance, so it is difficult to generalize as to the nature of the operating environment. The following information has been tailored to present a context for Tri-Rail operations. On the following page, Figure 1-1 shows a map of the Tri-Rail service area.

2.2 Regional Context

The SFRTA covers three Counties, Palm Beach, Broward and Miami-Dade, along the southeastern coast of Florida. All three Counties are highly urbanized along their eastern third. The western portions of these Counties consist of the Everglades, Lake Okeechobee and intensive agricultural areas. Tri-Rail runs north-south through the eastern half of that urbanized area between Mangonia Park in Palm Beach County and Miami International Airport (MIA) in Miami-Dade County.

2.3 Demographic and Economic Information

The three Counties have all exhibited tremendous growth since 1980, as is shown by Table 2-1.

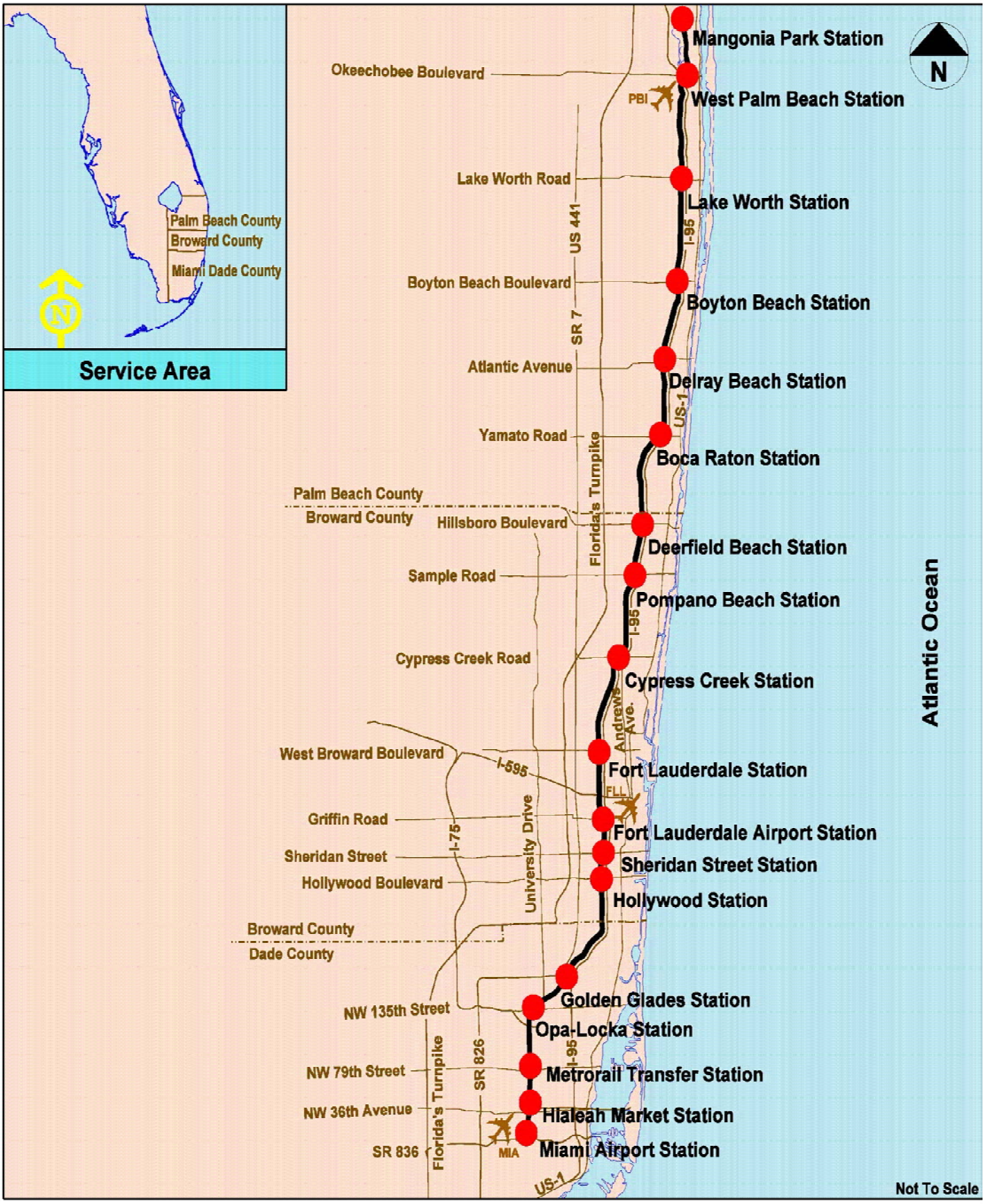
Table 2-1
South Florida Population Growth
1980-2000

County	1980	1990	% Growth	2000	% Growth
Broward	1,018,200	1,255,488	23.3%	1,623,018	29.3%
Miami-Dade	1,625,781	1,937,094	19.1%	2,253,362	16.3%
Palm Beach	578,531	851,659	47.2%	1,131,184	32.8%
TOTAL	3,224,492	4,046,231	25.5%	5,009,564	23.8%

Source: US Census Bureau Population by County from April 2003

The 25% growth in these Counties represents the need to grow in the quality and number of transportation options available to the citizens of South Florida. Given the coverage of transit service within the three county area the total county population is considered to be in the service area of Tri-Rail. (It should be noted that each of the three local transit systems report tye total county population as part of their service area). The Tri-Rail alignment runs through the eastern portion of the Counties. The area that is both impacted by Tri-Rail and is readily accessible to Tri-Rail is a somewhat smaller area that the whole of the three counties. The following detailed description of the area is based upon County Subdivisions, as defined by the 2000 US Census and updated in 2002 (April 2003 data is 2002 update). County Subdivisions, while given the names of principal cities, do not correspond to city limits and are generally larger than the city that has given its name to the subdivision. The subdivisions used cover the entire Tri-Rail alignment.

Figure 2-1
Tri-Rail Alignment and Service Area



The area defined by the County Subdivisions is comprised of 46.4 % of the total 3 county population. Table 2-2 shows the 2000 population by race and by county subdivision.

Table 2-2
Total Population by Race and Percent of Spanish Speaking

County Subdivision	White	Black	Asian	Other	Total	% of Spanish Speaking
Miami	449,524	269,933	10,942	75,468	850,867	50%
Deerfield Beach	123,092	18,220	3,337	8,537	153,186	10%
Ft. Lauderdale	169,384	99,136	3,532	19,295	291,347	11%
Hallandale	32,150	11,465	416	2,740	46,771	17%
Hollywood	130,788	21,909	3,162	13,063	168,922	19%
Pompano Beach	74,531	23,096	680	7,352	105,659	11%
Boca Raton	114,904	3,513	1,673	3,783	123,873	8%
Boynton Delray	213,007	38,440	3,051	11,324	265,822	7%
Lake Worth	145,272	18,559	2,779	20,490	187,100	20%
West Palm Beach	83,424	34,051	2,086	10,327	129,888	14%
TOTAL	1,536,076	538,322	31,658	172,379	2,323,435	

Source: US Census Bureau. Census 2000

A critical part of delivering transit service is understanding the age dynamics of the population, including that portion of the population that does not drive, or will not drive during the next five or ten years. Table 2-3 shows the population by age for each county subdivision. The table shows that the portions of the service area identified as Hallandale, Pompano Beach, Boca Raton, Boynton Beach and Delray Beach have large elderly populations that could become transit dependent.

Table 2-3
Age Distribution

County Subdivision	1-15 years		16-54 years		Over 55 years	
Miami	179,883	21%	462,226	51%	208,543	24.5%
Deerfield Beach	31,493	20%	81,785	53%	39,912	26%
Ft. Lauderdale	54,689	19%	164,313	56%	72,318	25%
Hallandale	7,155	15%	20,169	43%	19,447	42%
Hollywood	31,872	19%	91,652	54%	45,398	27%
Pompano Beach	16,871	16%	51,333	49%	37,455	35%
Boca Raton	17,594	14%	58,348	47%	47,931	39%
Boynton Delray	39,753	15%	107,833	40%	118,236	44%
Lake Worth	37,408	20%	98,033	52%	51,669	28%
West Palm Beach	24,385	19%	66,980	52%	38,522	30%
TOTAL	441,103	19%	1,202,672	52%	679,431	29%

Source: US Census Bureau. Census 2000

Transit service is closely related to income and poverty levels. Table 2-4 presents the number of households at different income levels and the population below the poverty level. The table shows that the county subdivisions of Deerfield Beach, Boca Raton and Boynton Delray Beach have the lowest percentage of individuals living below the poverty level. Only Miami subdivision has a significantly higher percentage of individuals living below the poverty level, when compared to the region as a whole.

Table 2-4
Household Income and Poverty Status

	Total Household Income				Persons	
County Subdivision	Under $25,000	$25,000 to $49,999	$50,000 to $99,999	Over $100,000	Below Poverty level[1]	
Miami	135,158	84,301	61,241	27,099	197,820	23%
Deerfield Beach	16,382	17,143	18,497	11,080	14,308	9%
Ft. Lauderdale	42,317	38,072	30,911	13,461	49,929	17%
Hallandale	9,978	6,759	4,469	1,332	8,476	18%
Hollywood	24,611	22,533	18,713	7,010	23,097	13%
Pompano Beach	15,958	15,542	11,669	4,691	15,881	15%
Boca Raton	9,460	10,958	16,516	17,578	6,699	5%
Boynton Delray	32,413	29,272	35,916	15,260	21,337	8%
Lake Worth	24,742	20,384	19,019	5,222	22,879	12%
West Palm Beach	20,603	13,654	12,352	6,456	21,577	16%
TOTAL	331,622	258,618	229,303	109,189	382,003	16%

[1] The column containing percentages represents the percentage of the total population within the County Subdivision living below the poverty level.

Source: US Census Bureau. Census 2000

The need for transit is also based upon the availability of a private vehicle for making required trips. Table 2-5 shows the vehicle ownership by household in the county subdivisions served by Tri-Rail. Deerfield Beach is the only community where the number of 2-3 vehicle families is less than half of the number of 1 vehicle families. Boca Raton is the only community where the number of 2-3 vehicle families exceeds the number of 1 vehicle families.

Table 2-5
Vehicles Available

	Vehicles per household			
County Subdivision	0 vehicles	1 vehicle	2-3 vehicles	4 + vehicles
Miami	48%	30%	31%	43%
Deerfield Beach	5%	6%	3%	8%
Ft. Lauderdale	11%	14%	13%	13%
Hallandale	3%	3%	2%	1%
Hollywood	7%	8%	8%	7%
Pompano Beach	4%	6%	5%	4%
Boca Raton	2%	5%	8%	2%
Boynton Delray	8%	14%	14%	6%
Lake Worth	5%	8%	9%	8%
West Palm Beach	7%	6%	6%	5%

According to the census data shown in Table 2-6, travel is still relatively easy in South Florida, with 62.6% of the total work trips requiring less than 30 minutes and another 23.6% requiring 30 to 44 minutes. That is 86% of the total work trips that can be made in 44 minutes or less. The Miami Dade County subdivision accounts for 33.7% of the total work trip, Fort Lauderdale is second with 14% and the Boynton Delray subdivision is third with 10.5% of the work trips. Only 4.7% of the total work trips are made on transit. The Miami subdivision has 8.8% of the total work trips on transit. Fort Lauderdale, Hollywood and Hallandale are close to the regional mode split average and all of the areas are substantially below the regional average mode split.

Of the total home-to-work transit trips within the region, 36% of the trips take over one hour and 25% of the transit trips take less than 30 minutes. The shortest travel times by transit for the home-to-work trips are West Palm Beach and Boca Raton. The longest travel times by transit occur for trips originating in Lake Worth (with 40% of transit trips taking over 1 hour) and Miami (with 38% of transit trips taking over 1 hour). Drivers from Fort Lauderdale and Pompano Beach have the highest percentage of trips that take less than 30 minutes, while all of the county subdivisions have 5-7% of the home-to-work trips requiring more than an hour commute.

Table 2-6
Travel Time to Work by Means of Transportation

	Less than 30 minutes		30 – 44 minutes		45-59 minutes		More than 60 minutes	
County Subdivision	Transit	Other	Transit	Other	Transit	Other	Transit	Other
Miami	5,994	167,030	6,884	76,314	4,136	20,818	10,366	16,511
Deerfield Beach	200	42,794	225	16,282	83	4,668	191	3,753
Ft. Lauderdale	1,772	84,148	1,655	25,392	745	7,133	2,169	6,177
Hallandale	181	10,092	199	3,862	60	1,302	257	1,133
Hollywood	706	45,399	589	17,321	403	6,017	725	4,086
Pompano Beach	391	27,480	310	9,029	102	2,055	318	2,087
Boca Raton	169	38,133	81	7,183	16	2,325	158	2,339
Boynton Delray	394	62,370	357	21,528	165	6,290	363	4,762
Lake Worth	258	47,960	285	19,636	110	5,381	430	4,362
West Palm Beach	589	38,279	354	8,903	102	2,016	381	2,540
TOTAL	10,654	563,685	10,939	205,450	5,922	58,005	15,358	47,750

2.4 Land Use

Overall, land use across South Florida is fairly low density, which is one of the largest obstacles to the utilization of Tri-Rail. Original land use patterns were created with the extension of the Florida East Coast (FEC) Railroad from Jacksonville to Miami. Historic downtowns sprang up along the east side of the FEC rail line. Today, the area east of the FEC has turned into high density commercial and residential areas that extend out onto the barrier islands. Parallel, and approximately 3 miles to the west of the FEC, is the CSX Railroad. Immediately west of the FEC, and along the CSX tracks, lies much of the region's industrial properties. In between the tracks lie I-95 and a strip of lower income, minority residential neighborhoods. West of the CSX lies large single family residential neighborhoods that developed in the late 1940's and 1950's. As the development moved further west, the age of the developments declined until they reached the urban development boundary. Now, many of the newest developments are occurring in urban infill areas.

Overall, South Florida is characterized by mixed land uses with transportation, commercial, industrial and residential being the most common. Most residential tracts are low or low-medium density with some clusters of higher density tracts scattered through out the urban area. Most employment is located in higher density areas within the urban cores of Miami, Fort Lauderdale and West Palm Beach. Outside of the downtown areas em-

ployment is mostly focused in low density office parks, strip malls and industrial and warehouse districts. The region is also traversed with numerous canals and navigable water ways that also have some impact in shaping and land use patterns in the region.

Along the rail corridor from south (Miami-Dade County) to north (Palm Beach County), land uses become less dense and less industrial as the corridor nears its northern terminus at Mangonia Park. Land uses around the stations are primarily industrial with pockets of residential areas. Urban blight is more extensive in the southern segment of the rail corridor, where development densities are the highest. There is little or no open or recreational space along the southern part of the corridor in Miami-Dade County. Figure 1-2 shows the land use in Miami Dade County.

Heading north along the corridor toward the Broward County border, densities increase and pockets of recreational uses, such as golf courses, campgrounds and small parks are interspersed with warehouse districts, trailer park and older residential areas. As the corridor continues north through Broward County schools, other institutional uses and office parks are added to the variety of land uses. Unique, along the corridor through Broward County, is the Oakwood Shopping Center northeast of the Sheridan Street station, the Outdoor World/Fishing Museum surrounding the Fort Lauderdale Airport and the high rise office concentration surrounding the Cypress Creek station. Figure 1-3 shows the Broward County land use.

Continuing northward into Palm Beach County densities continue to decrease becoming more medium-density residential, interspersed with vacant areas, light industrial, institutional uses and sprawling business parks. The station at Lake Worth is immediately adjacent to the Lake Worth High School and the West Palm Beach station has a number of major destinations within ½ mile. Figure 1-4 shows the Palm Beach County land use.

Figure 2-2
Miami-Dade County Land Use

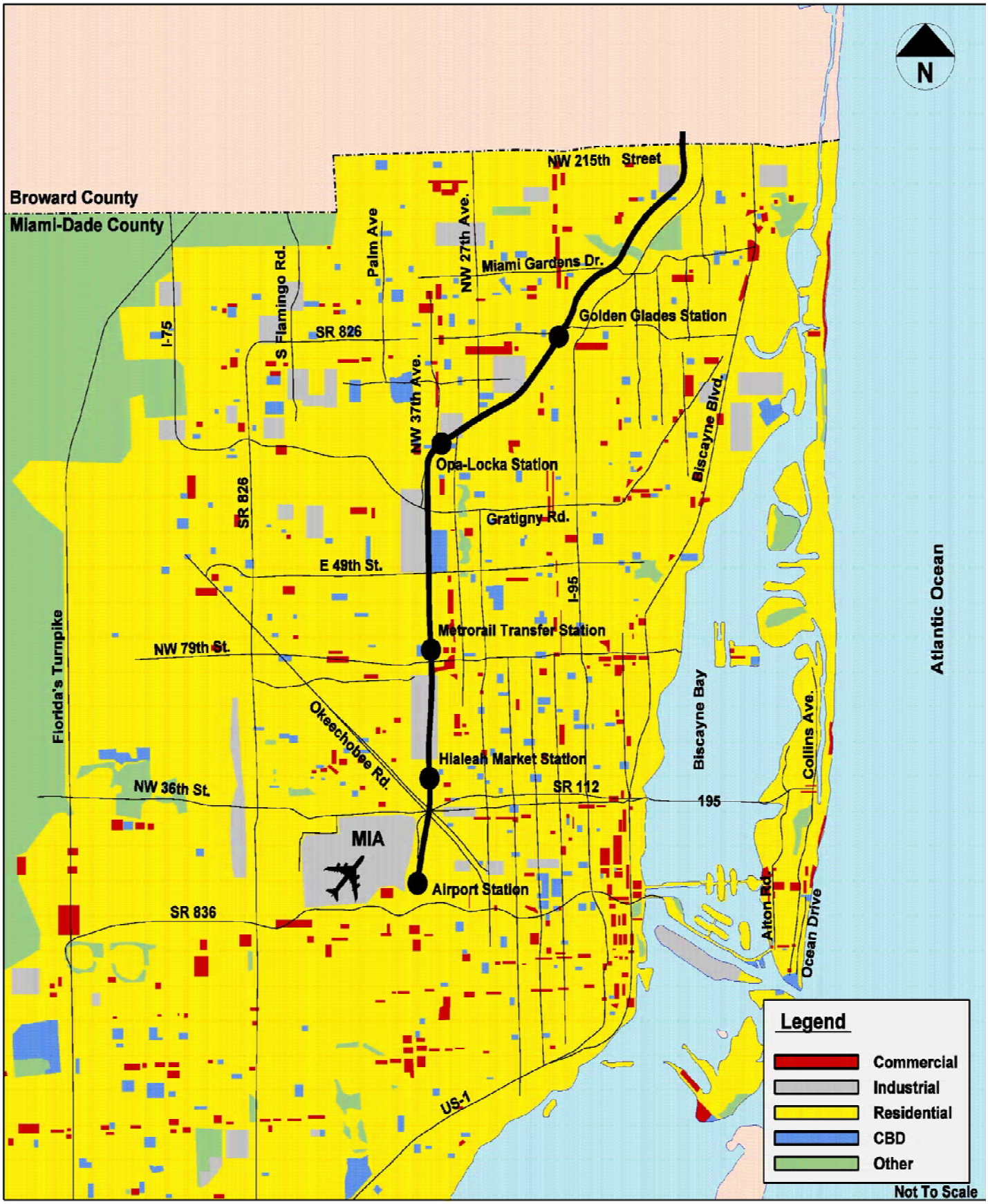


Figure 2-3
Broward County Land Use

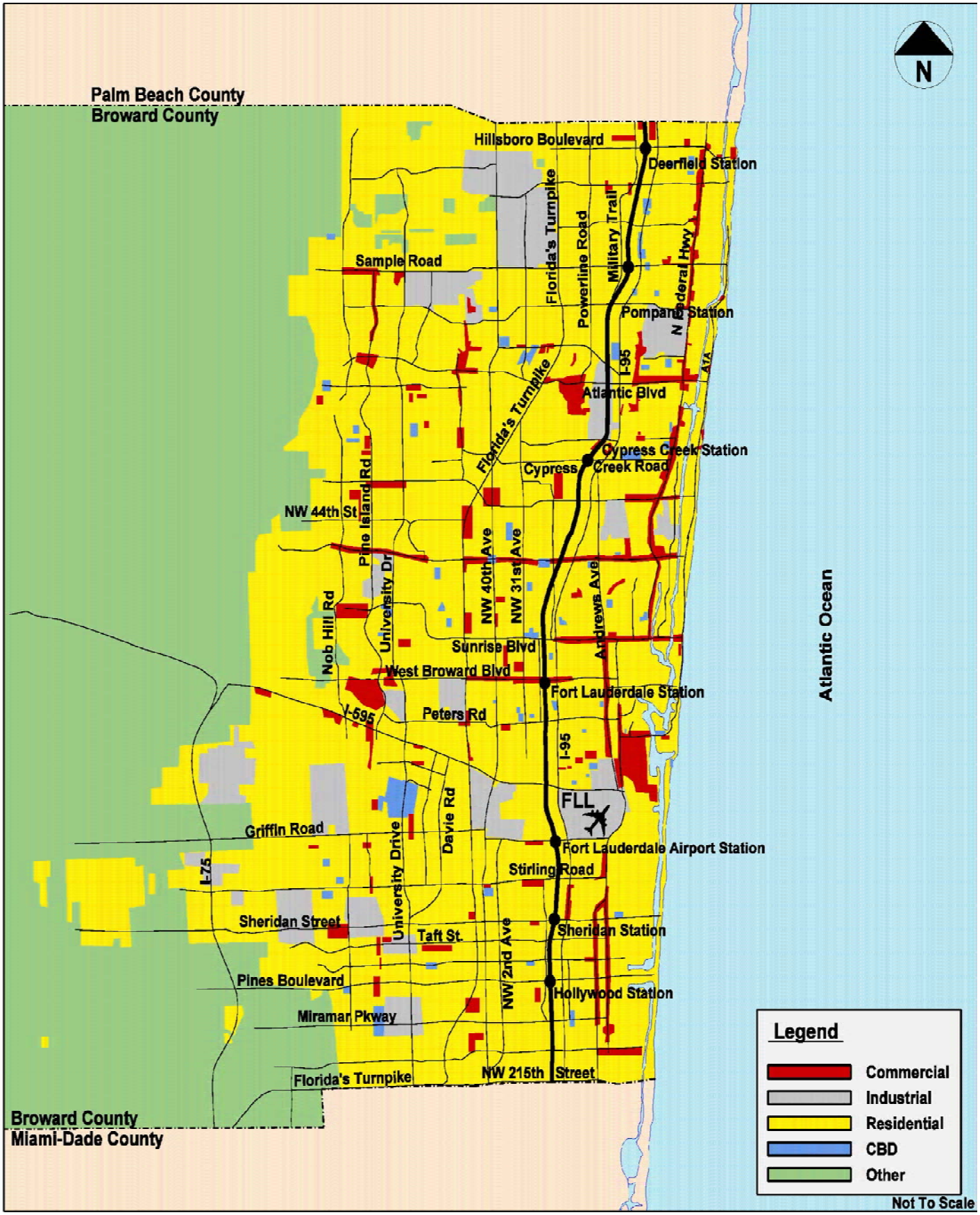
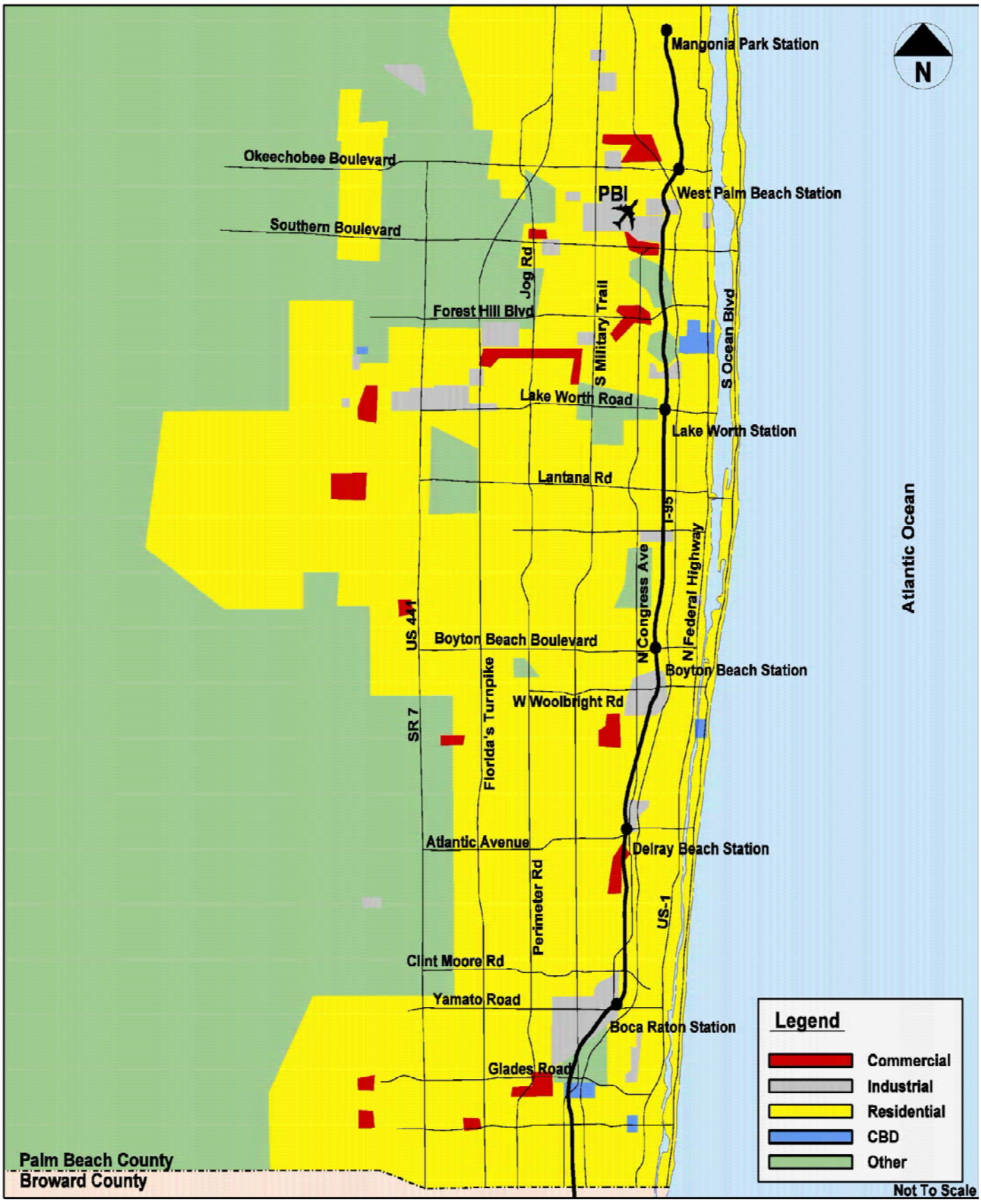


Figure 2-4
Palm Beach County Lane Use



Land uses around the stations are an important part of the ability of a transit station to attract passengers. The population and employment densities presented below are an average of the total TAZ number within a three mile radius of each station from the calculations presented in the Tri-Rail Feeder Bus Plan. The following describes the land use around each Tri-Rail station.

2.4.1 Miami Airport Station

With 180 park and ride spaces, the Miami Airport Station is less than one mile east of Miami International Airport (MIA) and is located within the middle of a light industrial area. The station serves as the south capture point of the Tri-Rail system and will become even more of an integral component when the Miami Intermodal Center (MIC) opens. From this center, patrons will have easier access to the new station from the airport. Presently, this station is adjacent to a rent-a-car facility and a hotel. In the near future, the station will be relocated to the north and the area will be redeveloped as part of the MIC. As of January 2005, the MIC is under construction. The area around MIA has the highest population density (10,200 persons per square mile) and the highest employment density (10,000 employees per square mile) of all the stations in the system. The only improvement needed is additional signage in and around the station.

2.4.2 Hialeah Market Station

Located half a mile east of LeJeune Road, the Hialeah Market Station is adjacent to a historic train station, which has been redeveloped as a weekend market. LeJeune Road is lined with higher density commercial facilities that are associated with MIA. To the south of the station, are trash and boat repair facilities. To the north, there are Home Depot and Fed Ex facilities. The station has 61 parking spaces and is centered in a heavy industrial area. There are several multi-family apartments within walking distance of the station. The area around the Hialeah Market station has the second highest densities along the Tri-Rail corridor (9,500 persons per square mile and 8,600 employees per square mile). This station could use additional signage and landscaping.

2.4.3 Metrorail Transfer Station

The Tri-Rail/Metrorail Station lies just south of the Hialeah train yard. The area around the station is industrial and warehouse uses with a substantial amount of local support commercial uses scattered throughout the area. Because the station is reliant upon transfers from Metrorail, there are only 42 park-and-ride spaces available at this station. The densities around the Metrorail Transfer station are among the highest along the corridor with 8,100 persons per square mile and 4,500 employees per square mile. Improvements needed at the station include landscaping, signage in and around station, additional parking and upgrading the Kiss-and-Ride area.

2.4.4 Opa-Locka Station

This station has 72 park-and-ride spaces and is adjacent to the remains of an old passenger rail station. Immediately across the street from the station is a series of multifamily four-plexes. Northeast of the station, lays the sparsely developed Opa-Locka downtown with low rise office building and accompanying support commercial facilities. South of the station is a large single family neighborhood with average densities of 12 units per acre. The area around the Opa-Locka station has about 6,100 persons per square mile, but only 3,100 employees per square mile. The only improvement is additional signage in and around the station.

2.4.5 Golden Glades Station

The Golden Glades Station is located in the center of an interchange, where I-95, the Florida Turnpike and the Palmetto Expressway merge. These expressways merge inside an industrial and warehousing district. However, most of the district is located to the north of the station. There are several large apartment complexes within the vicinity of the station. The area around the station has about 6,100 persons per square mile and 4,800 employees per square mile. There are 1,146 park-and-ride spaces serving patrons of MDT express buses, HOV facilities and Tri-Rail. There are two pedestrian bridges, one that lies above railroad tracks connecting the platforms and another one over State Road 9, which connects the parking lot to the train station. Patrons need to use this bridge to access the train station. Unfortunately, there is considerable distance between the Golden Glades Station and the parking lot. This can discourage patrons from using these transit facilities. This can also interfere between the interchanges patrons make from one transit mode to another from this station. Other improvements include additional signage and landscaping.

2.4.6 Hollywood Station

The station is located adjacent to I-95 Freeway, Stan Goldman Memorial Park and a single-family residential area. Within a quarter mile to the west is a large shopping center. The area around the Hollywood station has a medium high residential density with 5,200 people per square mile and a low employment density of only 2,500 employees per square mile. The station has a historic designation and is also an Amtrak station. There are 102 parking spaces at the station. As of January 2005, the northbound platform and the parking lot are currently under construction. The major improvements needed include additional signage indicating proper parking for Tri-Rail and Amtrak users, landscaping and additional parking.

2.4.7 Sheridan Street Station

The Sheridan Street Station is located in an area that consists mostly of single-family residential properties. Other features southwest of the station include several hotels, commercial and industrial properties. The station has a large park-and-ride lot that contains 871 spaces. Densities around the Sheridan Street station are very similar to the Hollywood station, with 4,400 persons per square mile and 2,800 employees per square mile.

2.4.8 Ft. Lauderdale Airport Station

This station is located to the southwest of the Fort Lauderdale-Hollywood International Airport. To the north of the station, is a mixture of warehousing and remote Airport parking lots. This station is located near the Bass Pro Commercial and Recreation complex near Griffin Road. Across from the entrance of the station is a large condominium complex. The complex is served by a large parking area with 193 spaces for Tri-Rail patrons. Other features around the station are the Broward County Humane Society, Design Center of the Americas (DCOTA), Broward Community College Outdoor Classes, Sportsman's Park, International Game Fishing Association and the Courtyard Marriot Hotel. This area has grown so quickly that there are no accurate estimates of population or employment densities. The station needs additional signage in and around the station.

2.4.9 Ft. Lauderdale Station

There are two large park-and-ride lots north of the Ft. Lauderdale Station, which is next to a freeway interchange overpass. Closer to the station there is separate parking designated for Tri-Rail and Amtrak patrons. There are 77 designated parking spaces for Tri-Rail patrons. This station also provides 36 spaces for Amtrak users. There is a small industrial area to the south of the station and various commercial developments on Broward Boulevard. There are 5,693 people per square mile around this station and just over 8,000 employees per square mile. The major improvement needed is additional signage in and around the station. Additional improvements needed also include increasing parking and filling in sidewalk gaps.

2.4.10 Cypress Creek Station

The Cypress Creek Station is located in the center of a highly developed commercial area with mid-rise offices, hotels and high-rise apartments. These properties are located within a ½ mile radius from the station. There are also additional properties adjacent to this station such as the University of Phoenix and a shopping mall. Located across Andrews Avenue is a park-and-ride lot that has 383 spaces. Cypress Creek has 4,500 persons and 5,300 employees per square mile in the area around the station. This station needs to upgrade the pedestrian and transit infrastructure. This area also needs improvements with the ingress and egress to station, signage and increasing the parking area.

2.4.11 Pompano Beach Station

The Pompano Beach Station is located within a commercial and warehousing area, which is south of Sample Road. East of the station is a large park-and-ride lot with 259 spaces. Seventy additional parking spaces, three bus bays for Broward County Transit (BCT) and SFRTA feeder buses and a kiss-and-ride lot will be constructed in the lot just west of the station in the summer of 2005. The Tri-Rail main office is located south of the station. The station ranks as average in both population density (4,200 persons per square mile) and employment (2,400 employees per square mile). Additional signage in and around the station and improved circulation are the only improvements needed.

2.4.12 Deerfield Beach Station

The Deerfield Beach station has a park-and-ride lot with 254 spaces and is located on Hillsboro Boulevard. The station has an Amtrak Railway Museum. Both Tri-Rail and Amtrak share the Deerfield Beach Station. This area around the station has several mid-rise offices and commercial buildings. There are several hotels to the east between I-95 and the station. Land uses also include warehousing to the west and south of the station. There are also retail developments and a Home Depot Store to the east of the station. There are 4,100 persons per square mile within a three mile radius of the station and 3,700 employees per square mile.

2.4.13 Boca Raton Station

Adjacent to the Boca Raton station is a small park-and-ride lot with 55 spaces. On the west side of the property, there are six to eight story office buildings and hotels neighboring the station. There is a large portion of undeveloped land in the surrounding areas of the station to the north and the east. As of January 2005, construction is underway for the new Boca Raton station that will have 370 spaces. The new station is being built to the south of the old Boca Raton station. The current station has among the lowest densities in the corridor with 2,900 persons and 1,600 employees per square mile within a three mile radius of the station. This station needs improvements with signage, egress and ingress to station, adding bus bays and increasing the parking area.

2.4.14 Delray Beach Station

The Delray Beach station has 148 park-and-ride spaces. The station borders a satellite County administrative facility that is behind a commercial and industrial strip development. As of January 2005, the parking lot was under construction due to renovation. Delray Beach has a very low population density around the station with 3,100 persons per square mile, and a high employment density of 3,300 employees per square mile. The Delray Beach station needs improvements with egress and ingress to station, external and internal signage and increasing the parking area.

2.4.15 Boynton Beach Station

This station is located in an area of mostly undeveloped land with pockets of light commercial developments. The station has a large 330-space park-and-ride lot. The population density around this station is low with 3,800 persons per square mile, as is the employment density – 2,300 employees per square mile. The improvements that are needed are additional signage, increasing the parking area and improving the ingress and egress circulation at the station.

2.4.16 Lake Worth Station

The Lake Worth station is located adjacent to Lake Worth High School. As of January 2005, the parking lot under the I-95 freeway has been under construction. The station has a temporary parking lot with 66 spaces located to the west. The surrounding area consists of several residential trailer parks, also to the west. Land uses along Lake Worth Avenue consist of light commercial land and institutional uses. This station, unlike the other Palm Beach County stations, has a relatively high population density of 4,700 persons per square mile, but it has the very lowest employment density of only 1,000 persons per square mile.

2.4.17 West Palm Beach Station

This station serves Tri-Rail, Amtrak, Greyhound and Palm Tran bus service and currently has 116 park-and-ride spaces. It lies west of the downtown area and is surrounded by a large lake and a lot of vacant land. There are, however, several high-rise office buildings in close proximity to the station. Several blocks east of the station, a large retail and residential area was recently developed. The land bordering the station is mainly for industrial and commercial use and consists of many significant pockets of vacant land between the station and downtown. There are plans to redevelop the area around the station and turn the current station into a true Intermodal Center. This station is surrounded by about 4,000 persons per square mile and 2,500 employees per square mile. The West Palm Beach station needs to provide safe crossings for school children and bus patrons. The station also needs to increase its parking area and signage.

2.4.18 Mangonia Park Station

Lying adjacent to an abandoned Jai Alai Fronton and a large multi-family apartment complex, this station contains 265 parking spaces. The area neighboring the stations is a blend of medium-density residential, commercial and industrial, with some warehousing. Despite the large amount of land that is taken up by the Fronton and its parking, there are about 3,900 persons and 1,800 employees per square mile within a three mile radius of the station. The only improvement is that more signage can be used in and around the station.

2.5 Public Facilities

Considering the length of the Tri-Rail corridor, there are relatively few public facilities such as schools and other institutional facilities within ½ mile of a Tri-Rail station. Their locations are shown in Table 2-7. Service expansion would provide increased travel options for users adjacent to and within the corridor.

Table 2-7
Community Services and Facilities Adjacent to the SFRC

Facility Name	County	City	Location
Opa-Locka Elementary School	Miami-Dade	Opa-Locka	600 Ahmad Street
Delray Beach Courthouse	Palm Beach	Delray Beach	West of Tri-Rail Track; ½ mile south of Atlantic Boulevard
Lake Worth High School	Palm Beach	Lake Worth	East of I-95 immediately adjacent to Lake Worth Station
Performing Arts School US Federal Building Kravis Center for Performing Arts	Palm Beach	West Palm Beach	East of Tri-Rail Track; between Banyan Boulevard and Okeechobee Road
Roosevelt Elementary School	Palm Beach	West Palm Beach	East of Tri-Rail Track; between Banyan Boulevard and Okeechobee Road
Northmore Elementary School	Palm Beach	West Palm Beach	East of Tri-Rail Track; between 45 and 36 Street
Community Mental Health Center	Palm Beach	West Palm Beach	East of Tri-Rail Track; on the north side of 45 Street

As can be seen in Table 2-8, there are a large number of parks and recreational areas with easy access to Tri-Rail facilities.

Table 2-8
Parkland and Recreational Facilities

Public Parkland Facilities		
Facility Name	City	Location
Ives Estates Park	North Miami	Northeast of 96 Street and NE 12 Avenue
Stan Goldman Memorial Park	Hollywood	Just west of Hollywood Tri-Rail Station; north side of Hollywood Boulevard
Charnow Park	Hollywood	Just west of Tri-Rail track on north side of Arthur Street
Topeekeegee Park	Hollywood	Just west of Tri-Rail track on north side of Sheridan Street
Emerald Hills Park	Hollywood	Just west of Tri-Rail track on south side of Sterling Road
Flamingo Park	Ft. Lauderdale	Just west of Tri-Rail track; 1.75 miles south of Davie Boulevard
Osswald/Rock Island Park	Ft. Lauderdale	Just west of Tri-Rail track; 1.25 miles south of Oakland Park Boulevard
Mills Pond Park	Ft. Lauderdale	Just east of Tri-Rail track; between NW 19 Street & Oakland Park Road
John D. Easterlin Park	Oakland Park	Just west of Tri-Rail track; north of Oakland Park Road
Ecidar Park	Deerfield Beach	Just west of Tri-Rail track; 1.25 miles south of SW 10 Street
Lake Ida Park	Delray Beach	Just east of Tri-rail track;1.25 miles northeast of Delray Beach Station
Caloosa Park	Delray Beach	Just east of Tri-Rail track; 1.5 miles northeast of Delray Beach Station
NW 17 Avenue Park	Boynton Beach	Just east of Tri-Rail track; on NW 17 Avenue
Dreher Park/Zoo	West Palm Beach	Just east of Tri-Rail track; between Summit and Southern Boulevard
Howard Park	West Palm Beach	Just east of Tri-Rail track; between Okeechobee and Belvedere Road
East Parkway Park	West Palm Beach	Just east of Tri-Rail track; between 25 Street and Lakes Boulevard
Hillcrest Memorial Park	West Palm Beach	Just east of Tri-Rail track; between Forest Hill & Southern Boulevard

Table 2-8 (Continued)
Parkland and Recreational Facilities

Public Parkland Facilities		
Facility Name	City	Location
Stubb Canal Park	West Palm Beach	Just west of Tri-Rail track; ¼ mile west of Palm Beach Airport Station
Private Recreational Facilities		
Coral Creek Golf & Country Club	North Miami-Dade County	Just west of tracks at NE 195 Street
Diplomat Presidential Golf Course	North Miami-Dade County	Just east of I -95 at NE 191 Street
Orange Brook Golf Course	Hollywood	Just west of the tracks and south of the Hollywood Station
Boca Teeca Golf Course	Boca Raton	5800 NW 2 Avenue; East of I-95

2.6 Activity Centers

Tri-Rail, in conjunction with their feeder bus system and the local County Transit systems, provides access to almost every major activity center in the three-county area. Figure 1-5 through 1-7 shows the location of each activity center and Table 2-9 shows the Tri-Rail station and the local bus route that can be used to access each major activity center.

Table 2-9
ACTIVITY CENTER ACCESS

#	ACTIVITY CENTER	TRI-RAIL STATION	REQUIRED CONNECTIONS
Miami-Dade County			
1	Downtown Miami	Metrorail Transfer	Metrorail
2	Miami International Airport	MIA	Airport Shuttle
3	Civic Center Hospital Complex	Metrorail Transfer	Metrorail
4	Blue Lagoon Office Complex	MIA	East West Connector
5	Doral	Hialeah Market	Tri-Rail Shuttle
6	South Beach	Metrorail Transfer	Route L
7	Aventura	Golden Glades	Route E
8	Brickell	Metrorail Transfer	Metrorail
9	MDC North	Metrorail Transfer	Route L to Route 27
10	MDC Wolfson Campus	Metrorail Transfer	Metrorail
11	Dolphin/International Mall	MIA	East West Connector
12	Coconut Grove	Metrorail Transfer	Metrorail to Route 42
13	Coral Gables Miracle Mile	MIA	
14	Dadeland South	Metrorail Transfer	Metrorail
15	Barry University	Metrorail Transfer	Route L to Route 9

Table 2-9 (Continued)
ACTIVITY CENTER ACCESS

#	ACTIVITY CENTER	TRI-RAIL STATION	REQUIRED CONNECTIONS
Miami-Dade County			
16	FIU North	Golden Glades	Route E to Route 83
17	FIU South	Metrorail Transfer	Metrorail to Route 11
18	Lincoln Road	Metrorail Transfer	Route L
19	Metrozoo	Metrorail Transfer	Metrorail to Coral Reef Max
20	Museum of Science	Metrorail Transfer	Metrorail
21	Seaquarium	Metrorail Transfer	Metrorail to Route B
22	Mount Sinai Hospital	Metrorail Transfer	Metrorail to Route C
23	Parrot Jungle	Metrorail Transfer	Metrorail to Route C
24	ProPlayer Stadium	Golden Glades	MDT Game Shuttle
25	University of Miami	Metrorail Transfer	Metrorail
26	American Airlines Arena	Metrorail Transfer	Metromover
Broward County			
27	Downtown Ft. Lauderdale	Fort Lauderdale	Tri-Rail Shuttle
28	Downtown Hollywood	Hollywood	Route 7
29	Cypress Creek	Cypress Creek	
30	Broward Mall	Fort Lauderdale	Route 22
31	Pembroke Lakes Mall	Hollywood	Route 7
32	Oakwood Center	Sheridan Street	Route 3
33	Sawgrass Mall	Fort Lauderdale	Route 22
34	Los Olas Riverfront	Fort Lauderdale	Tri-Rail Shuttle
35	Fort Lauderdale-Hollywood International Airport	Fort Lauderdale Airport	Tri-Rail Shuttle
36	IGFA/Fishing Hall of Fame	Fort Lauderdale Airport	
37	South Florida Education Center (NOVA)	Fort Lauderdale Airport	SFEC Shuttle
38	BCC South Campus	Hollywood	Route 7
39	Broward Convention Ctr.	Fort Lauderdale	Route 53 to the 40
40	General Medical Center	Fort Lauderdale	Shuttle to Route 1
41	Ft. Lauderdale Beach	Fort Lauderdale	Shuttle to Route 40
42	North Broward Medical Ctr.	Pompano Beach	Route 34
43	Office Depot Arena	Fort Lauderdale	Route 22
44	IMAX	Fort Lauderdale	Shuttle
Palm Beach			
45	Boynton Beach Mall	Boynton Beach	Route 71
46	City Place	West Palm Beach	Route 46
47	Delray Beach	Delray Beach	Route 81
48	Downtown Lake Worth	Lake Worth	Route 62
49	Downtown W. Palm Beach	West Palm Beach	Shuttle
50	FAU	Boca Raton	Route 94
51	Florida Culinary Institute	Mangonia Park	Route 31
52	Mars Music Amphitheater	West Palm Beach	Route 43

Table 2-9 (Continued)
ACTIVITY CENTER ACCESS

#	ACTIVITY CENTER	TRI-RAIL STATION	REQUIRED CONNECTIONS
Miami-Dade County			
Palm Beach			
53	Mizner Park	Boca Raton	Route 2 to Route 91
54	Norton Gallery of Art	West Palm Beach	Shuttle to Route 1
55	Palm Beach Airport	West Palm Beach	Route 40
56	Town Center Mall	Boca Raton	Route 2
57	VA Medical Center	Mangonia Park	Route 31
58	Worth Avenue	West Palm Beach	Route 41

Figure 2-5
Tri-Rail Miami-Dade County Activity Centers

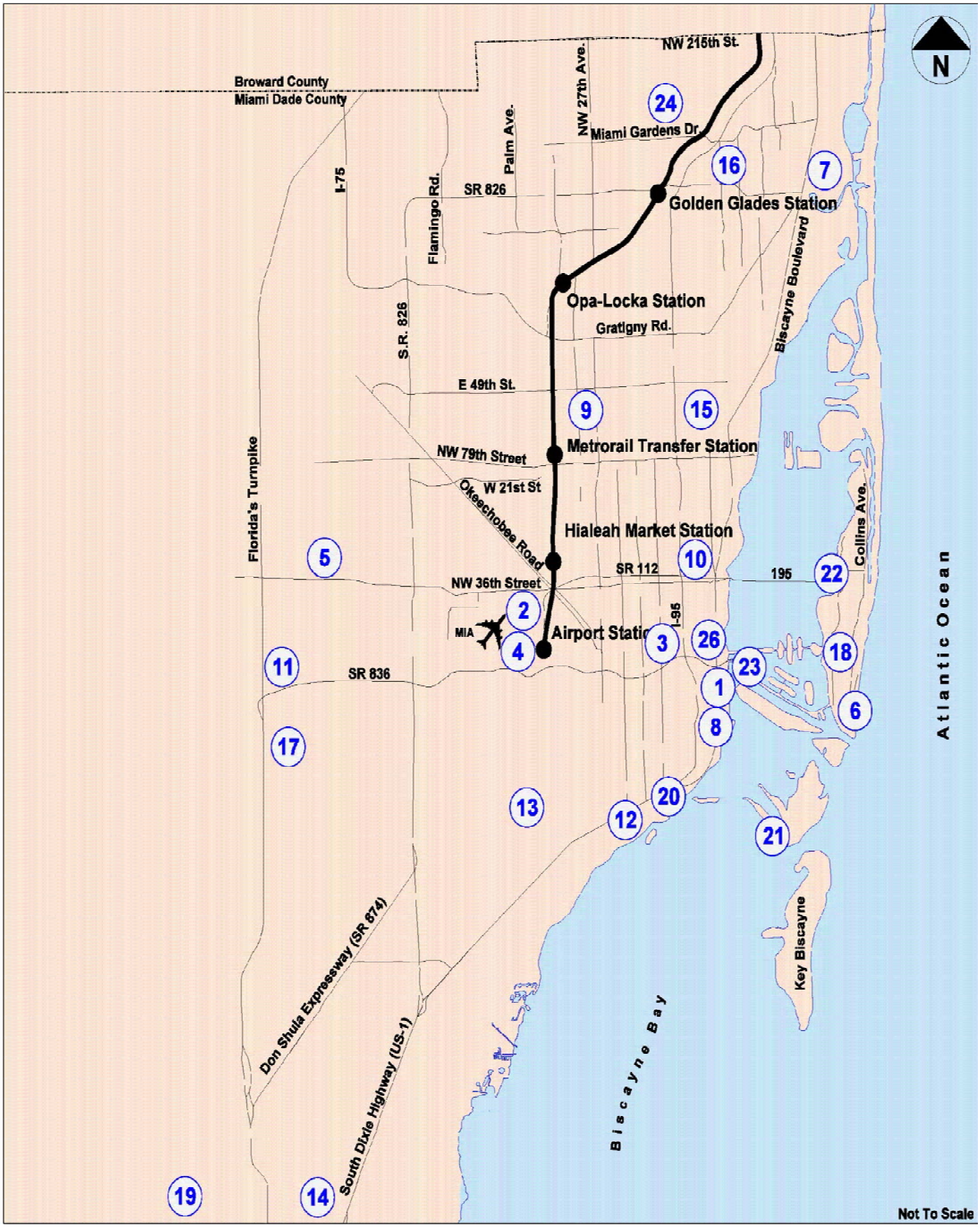


Figure 2-6
Tri-Rail Broward County Activity Centers

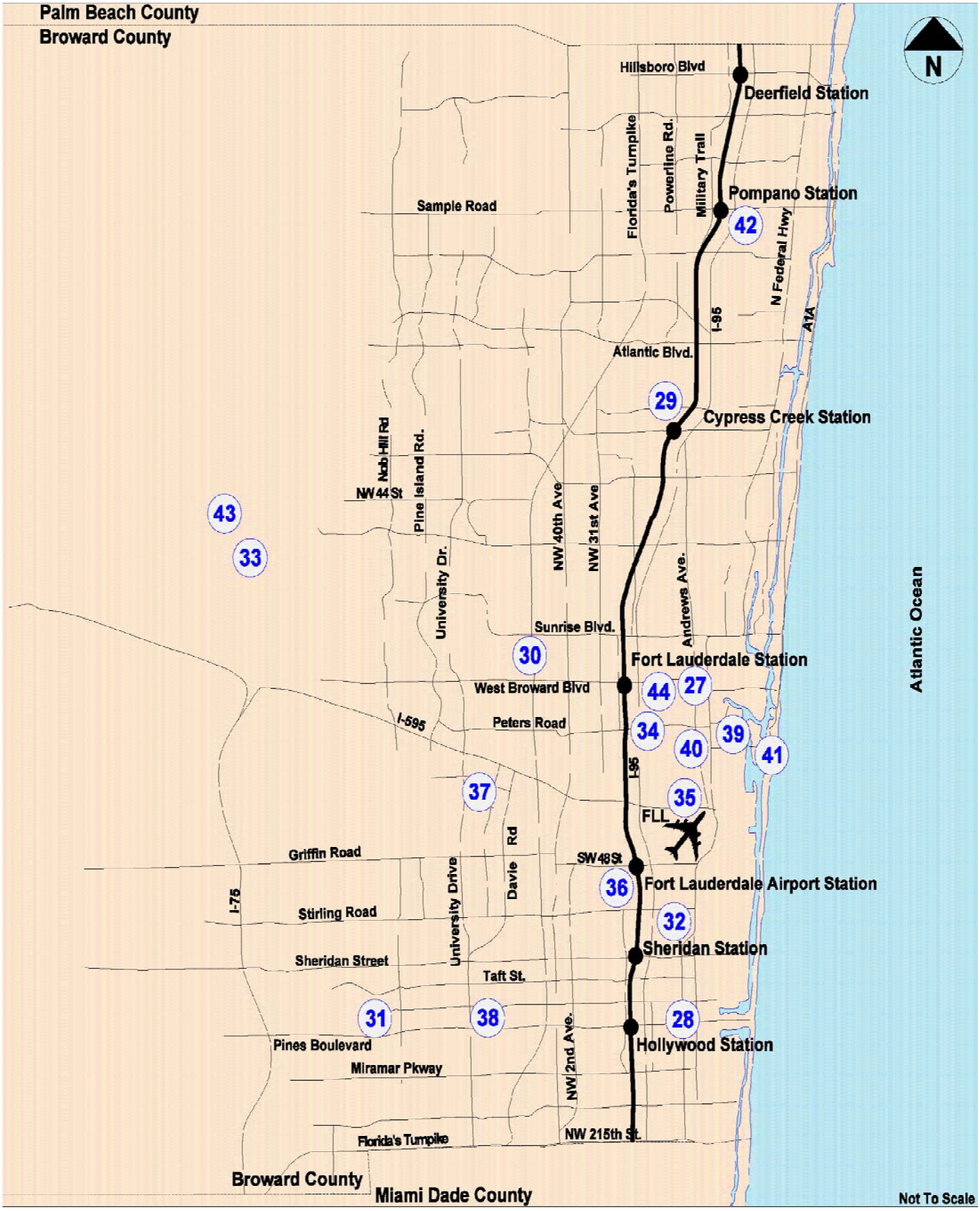
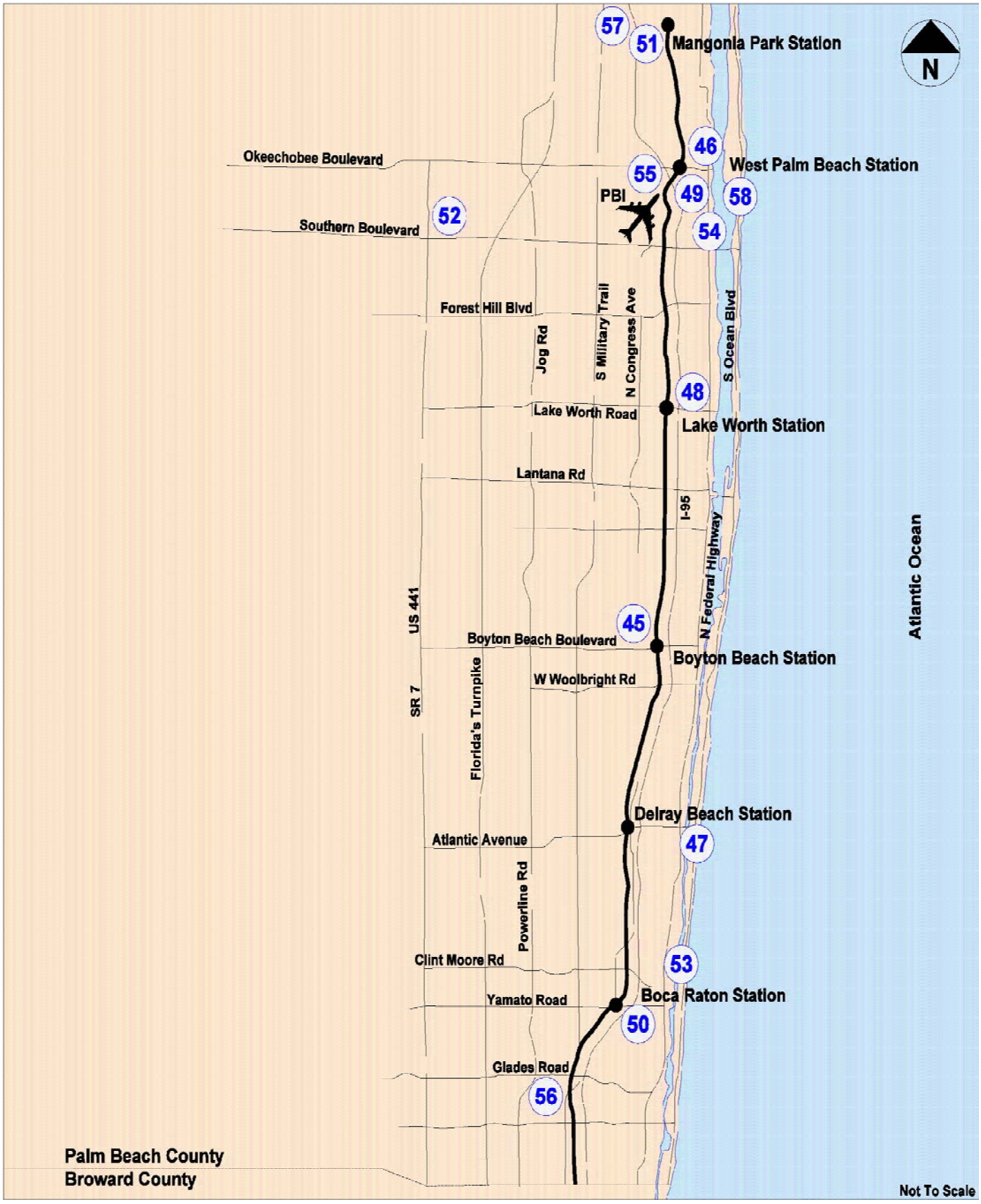


Figure 2-7
Tri-Rail Palm Beach County Activity Centers



2.7 Associated Transit Service

Tri-Rail operates through 3 counties, each with its own transit system, necessitating the coordination of schedules and connections with each system.

2.7.1 Palm Tran

Palm Tran is a Department of Palm Beach County operating 33 fixed bus routes. Service is operated Monday through Sunday between the hours of 5:00 am and 11:00 pm with individual schedules varying. The service is concentrated in the eastern portion of the County between Palm Beach Gardens on the north and Boca Raton on the south. Palm Tran service is shown in Figure 1-8 and is described in Table 2-10. The standard one-way fare on Palm Tran is $1.25, unlimited daily passes are available for $3.00 and unlimited 31-day passes are available for $50.00. Discounted fares are available for seniors, students, disabled individuals and Medicare passengers who meet certain eligibility requirements. Palm Tran also leases vehicles for the cities of Boynton Beach and Lake Worth to operate on behalf of their residents.

Figure 2-8
Palm Tran Transit Map

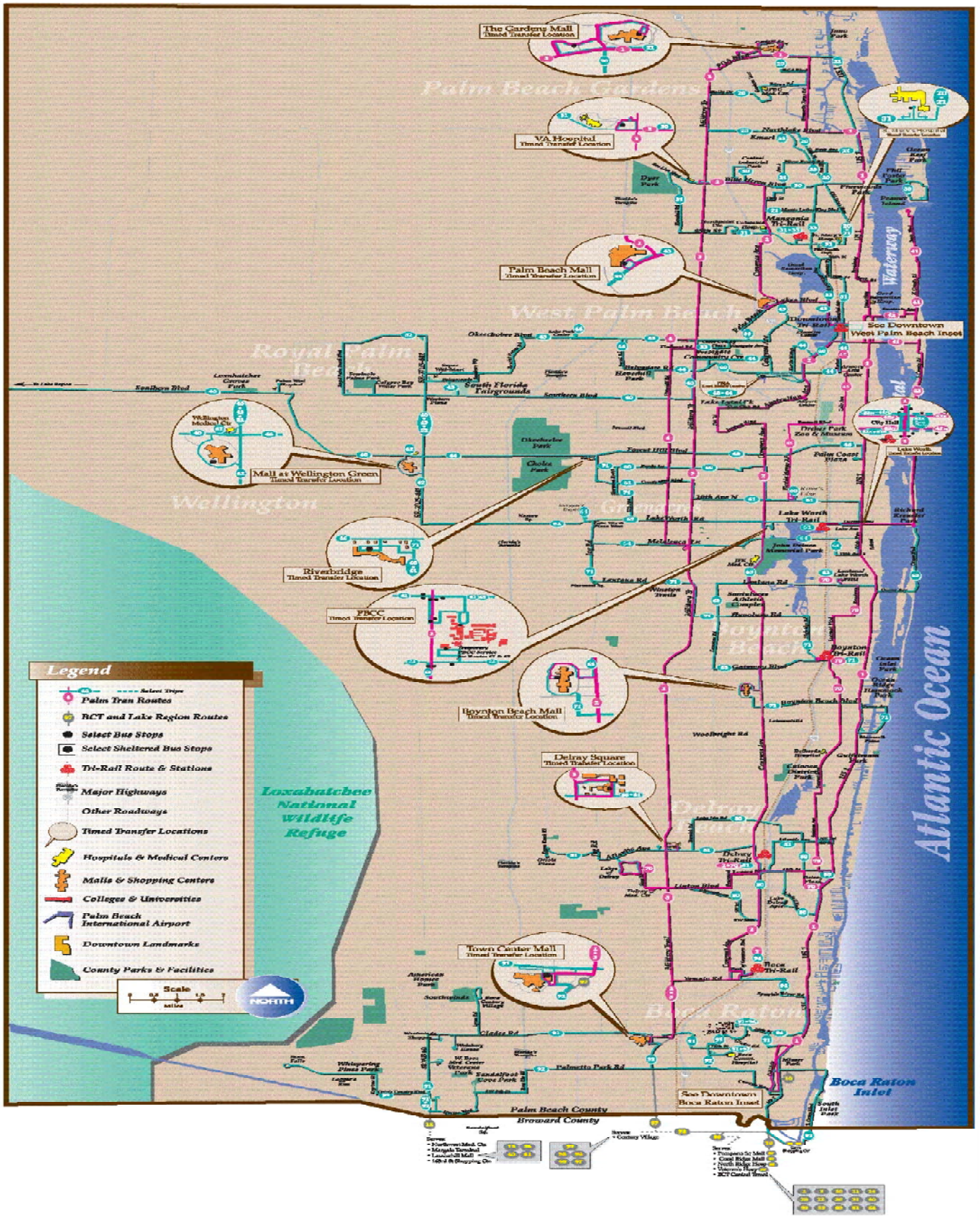


Table 2-10
Palm Tran Service

#	Route Name	Peak/Off Peak Headway	Annual Ridership	Major Destination
1	Gardens Mall to Boca Raton via US 1	30 min/30 min	1,483,393	Palm Beach Gardens, Downtown WPB, Tri-Rail, BCT
2	VA Medical Center to Boca Raton	30 min/30 min	779,049	PB Mall, WPB Airport, PBCC, Tri-Rail, Town Center Mall
3	Palm Beach Gardens to Boca Raton	30 min/30 min	659,678	Gardens Mall, VA,WPB, Lake Worth, Boynton, Delray,
4	Okeechobee Blvd. to Lake Worth via Haverhill	60 min/60 min	34,468	Cross Country Plaza, Greenacres Library, Lake Worth Plaza
20	Gardens Mall to St. Mary Hospital	60 min./60 min.	75,484	N. County Courthouse, PB Gardens Hospital
21	Gardens Mall to St. Mary Hospital via US 1	60 min/60 min	76,000	N. County Courthouse, PBCC North, Riviera Beach, St. Mary's Hospital
30	VA Medical Center to Singer Island	30 min/60 min	95,953	VA, Seagull Industries, Inlet Grove HS, Riviera Beach, Singer Island
31	VA Medical Center to WPB	30 min/60 min	226,379	Northpoint, Columbia Hospital, Tri-Rail, WPB
33	Northlake to Cross County Plaza	60 min/60 min	106,200	Cross County Plaza, PB Mall, Tri-Rail, Northlake
40	WPB to Belle Glade	60 min/60 min	159,849	HRS/Courthouse, Palm Hospital, PB Airport, Tri-Rail
41	WPB to Palm Beach Inlet	60 min/60 min	35,519	Downtown WPB, Palm Beach, PB Inlet
42	WPB to Lake Worth via Palm Beach	60 min/60 min	46,715	Downtown WPB, Lake Worth Beach, Downtown LW, Tri-Rail
43	WPB to Wellington via Okeechobee Blvd.	30 min/60 min	361,598	Downtown WPB, PB Mall, Fairgrounds
44	WPB to Lake point Center via Belvedere	60 min/60 min	85,788	Tri-Rail, Centre Park, PB Airport, Drexel Plaza
46	WPB to Wellington Garden Via Forest Hill	30 min/60 min	184,537	Tri-Rail, Armory Art Centre, PB Zoo, PBC School
47	Pahoke to Belle Glade via SR 15	60 min/60 min	155,278	Belle Glade, HRS, Courthouse, Glades Hospital, Glades Diamond
48	South bay to Canal Point via SR 715	60 min/60 min	126,881	South Bay, Glades Central, PBCC, Osceola Center, Canal Pt.
50	Downtown Shuttle WPB	20 min/20 min	28,910	Tri-Rail, PB Government Center, Library
52	Royal Palm Beach Crosstown	60 min/60 min	22,823	Royal Palm beach, Water park, Village Hall, Library
60	River Bridge to Lake Worth Tri-Rail	60 min/60 min	67,412	River Bridge, Lakeside Village, YMCA, Tri-Rail
61	River Bridge to Nassau Square	60 min/60 min	144,028	Greenacres, Lake Worth, PBCC, JFK Medical
62	Wellington Green to Lake Worth	30 min/60 min	220,333	Wellington Green, Tri-Rail, PBCC, Nassau Square, Lake Worth
63	Lake Worth Beach to Boynton Beach Mall	60 min/60 min	61,464	Lake Worth Beach, Lantana Shopping Center, Boynton Beach Mall
71	River Bridge to Boynton Beach	60 min/60 min	144,917	Riverwalk, Tri-Rail, Pinewood Square
80	Delray Crosstown via Lake Ida	60 min/60 min	91,428	Delray Sq., Delray Beach, Sable Pines, Delray Medical Center
81	Delray Beach Crosstown	60 min/60 min	89,768	Downtown Delray, Tri-Rail

Table 2-10 (Continued)
Palm Tran Service

#	Route Name	Peak/Off Peak Headway	Annual Ridership	Major Destination
91	Boca Raton Crosstown Via Glades	30 min/30 min	238,830	Sandalfoot Sq., Weinberg House, Century Village, FAU
92	Boca Raton	60 min/60 min	86,780	Mizner Park, Boca Community Hospital, Town Center, Bay Winds
94	FAU to Boca Tri-Rail	60 min/60 min	53,039	Tri-Rail, Park of Commerce, FAU
-	Lake Region Commuter Route	120 min/120 min	-	US 27, Belle Glade, Clewiston

All SFRTA stations in Palm Beach County are served by Palm Tran service as shown in Table 2-11.

Table 2-11
Palm Tran Routes Serving SFRTA

Station	Routes
Mangonia Park Station	31, 33
West Palm Beach Station	2, 31, 43, 44, 46, 50, 53
Lake Worth Station	42, 60, 62
Boynton Beach Station	70, 71
Delray Beach Station	2, 70, 81
Boca Raton Station	2, 94

2.7.2 Broward County Transit

Broward County Transit (BCT) is the public transit provider for Broward County. The BCT service area covers 410 sq. miles and a population of over 1.6 million. BCT uses a fleet of 260 buses to provide service on 40 routes, resulting in 12.7 million revenue miles and 31.6 million passenger trips annually. All, but five of the 40 routes, operate seven days a week. Routes operate from as early as 5:00 am to as late as midnight. BCT headways range from 15 minutes to 90 minutes, with core routes operating at 15 to 30 minute headways. Figure 1-9 shows that BCT provides service to most of the urbanized portion of Broward County. Table 2-12 provides by route a description of the each route, days of service, span of service, peak and off-peak frequencies, annual ridership and destinations served.

Figure 2-9
Broward County Transit Map

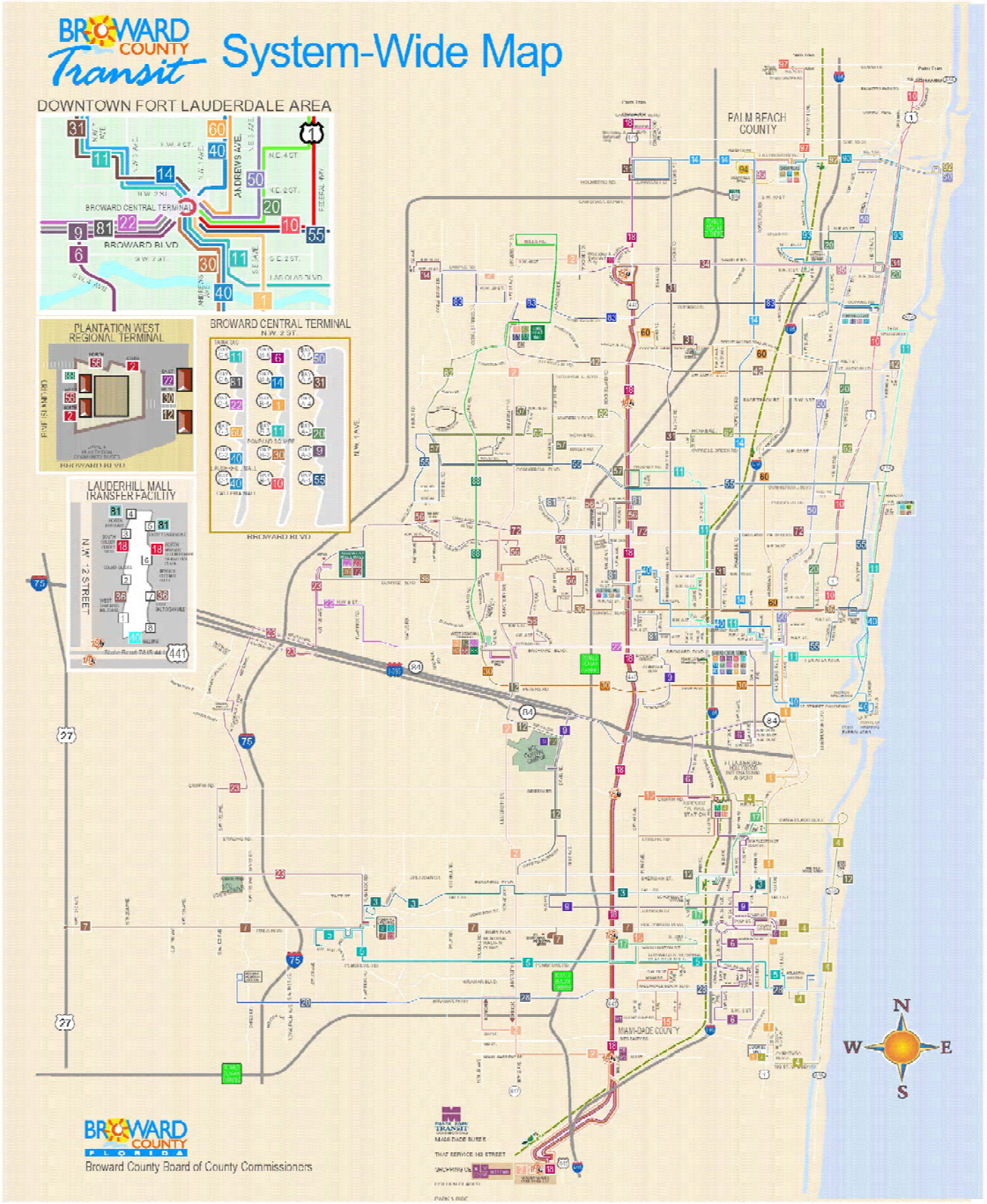


Table 2-12
Broward County Transit Route

	Headway		Service Span				
Route	Peak (Mins.)	Off-Peak (Mins.)	Weekday	Saturday	Sunday	Annual Passengers (FY 2002)	Destinations
1	15	15	5:10 AM - 11:40 PM	5:10 AM - 11:30 PM	8:25 AM - 9:25 PM	2,156,374	Aventura Mall, Young Circle, Ft. Lauderdale/Hollywood Airport, Broward Central Terminal
2	20	20	5:05 AM - 12:15 AM	5:15 AM - 12:00 AM	8:35 AM - 9:40 PM	1,651,970	Coral Springs, Coral Square Mall, West Regional Terminal, University Dr. & Pines Blvd, Miami-Dade County/207 St., Golden Glades Interchange
3	60	60	5:55 AM - 8:00 PM	5:55 AM - 8:00 PM	-	296,019	Ft. Lauderdale Airport Tri-Rail Station, Taft St. & Hwy. 441, Flamingo Plaza, Century Village, Dania Beach City Hall
5	60	60	5:35 AM - 9:55 PM	7:15 AM - 9:35 PM	8:05 AM - 8:25 PM	434,295	Old Federal Hwy. & SE 3 St., Pembroke Rd. & Hwy. 441, Pines Blvd. & University Dr., Pembroke Lakes Mall, Flamingo Plaza
6	30	30	5:10 AM - 10:05 PM	5:10 AM - 10:05 PM	10:00 AM - 7:55 PM	545,345	Young Circle, County Line Rd., Dania Beach City Hall, Ft. Lauderdale Tri-Rail Station
7	30	30	5:00 AM - 11:45 PM	5:00 AM - 11:45 PM	9:30 AM - 7:00 PM	1,252,231	Young Circle, Hollywood Tri-Rail, Hollywood Blvd. & 441, BCC South Campus, Pembroke Lakes Mall, SW 210 Ave., Dania Beach, US 27 & Pines Blvd.
9	40	40	5:55 AM - 10:35 PM	6:00 AM - 10:30 PM	8:25 AM - 8:35 PM	1,009,952	Broward Central Terminal, BCC Central Campus, Young Circle, Hallandale Beach Blvd., Aventura Mall
10	30	30	5:20 AM - 11:45 PM	5:20 AM - 11:35 PM	8:45 AM - 8:45 PM	1,051,602	Broward Central Terminal, Boca Raton
11	30	30	5:00 AM - 11:45 PM	5:00 AM - 11:45 PM	7:00 AM - 9:10 PM	1,317,871	Pompano Square, Broward Central Terminal, Commercial Blvd. & Hwy. 441
12	40	40	6:00 AM - 8:00 PM	6:05 AM - 7:50 PM	10:00 AM - 7:15 PM	502,255	West Regional Terminal, BCC Central Campus, Sheridan St. Park & Ride, Sheridan St./Anne Kolb Nature Center
14	20	20	5:00 AM - 11:40 PM	5:30 AM - 12:05 AM	9:00 AM - 7:55 PM	1,079,151	Broward Central Terminal, Oakland Park Blvd.., Atlantic Blvd., Sample Rd., Hillsboro Blvd., Johnson Rd. & Hwy. 441
15	45	45	5:00 AM - 10:10 PM	5:00 AM - 10:10 PM	10:15 AM - 7:10 PM	188,329	Ft. Lauderdale Airport Tri-Rail Station, SW 56 Ave. & Hollywood Blvd., Pembroke Rd. & SW 40 Ave., Hallandale Beach Blvd. & SW 52 Ave.
17	40	40	5:50 AM - 8:35 PM	6:20 AM - 8:35 PM	10:10 AM - 6:50 PM	157,113	Washington St. & Hwy 441, Sheridan St. Tri-Rail Park & Ride, Federal Hwy. & Taft St.

Table 2-12 (Continued)
Broward County Transit Route

	Headway		Service Span				
Route	Peak (Mins.)	Off-Peak (Mins.)	Weekday	Saturday	Sunday	Annual Passengers (FY 2002)	Destinations
18	30	30	4:40 AM - 12:40 AM	4:20 AM - 12:00 AM	6:45 AM - 10:20 PM	3,852,495	Sandalfoot Blvd. & Hwy 441 (Saturday Only), Margate Blvd. & Hwy. 441, Coconut Creek Pkwy. & Hwy. 441, 163 St. Shopping Center
20	40	40	5:45 AM - 9:50 PM	5:45 AM - 9:50 PM	10:00 AM - 6:45 PM	442,956	Broward Central Terminal, Oakland Park Blvd. & Federal Hwy., Copans Rd. & Dixie Hwy., North Broward Medical Center, Sample Rd. & Federal Hwy.
22	30	30	5:35 AM - 11:55 PM	5:50 AM - 12:05 AM	8:20 AM - 8:45 PM	1,282,686	Sawgrass Mills Mall/Green Toad Entrance, West Regional Terminal, Broward Mall, Broward Central Terminal
23	45	45	6:30 AM - 7:30 PM	8:00 AM - 7:30 PM	8:00 AM - 7:50 PM	91,309	Pembroke Lakes Mall, Weston Park of Commerce, Academic Village, SR 84/Weston, Sawgrass Mills Mall
28	30	30	5:10 AM - 11:50 PM	5:10 AM - 11:50 PM	9:30 AM - 7:25 PM	950,337	Young Circle, Federal Hwy. & Hallandale Beach Blvd., Hwy 441 & Hallandale Beach Blvd., Miramar Park of Commerce, Huntington Square Office Park
30	30	30	6:00 AM - 11:05 PM	6:00 AM - 11:05 PM	9:30 AM - 7:55 PM	659,470	Broward Central Terminal, West Regional Terminal
31	20	20	5:15 AM - 11:40 PM	4:43 AM - 11:30 PM	8:25 AM - 8:55 PM	1,435,194	Broward Central Terminal, Coconut Creek Pkwy. & Hwy. 441, BCC North Campus, Atlantic Blvd. & Dixie Hwy., Atlantic Blvd. & AIA
34	30	30	5:20 AM - 10:25 PM	5:20 AM - 8:25 PM	8:25 AM - 6:55 PM	436,435	Coral Springs Corporate Park, Tradewinds Park, Festival Flea Market mall, Sample Rd. Tri-Rail, Federal hwy.
36	20	20	5:00 AM - 12:10 AM	5:10 AM - 12:10 AM	8:05 AM - 9:10 PM	2,278,672	Sawgrass Mills Mall/Green Toad Entrance, Sunset Strip & University Dr., Lauderhill Mall, Sunrise Blvd. & NE 26 Ave., NE 36 St. & Galt Ocean Mile
40	30	30	5:35 AM - 11:30 PM	5:35 AM - 11:30 PM	7:40 AM - 8:15 PM	1,201,151	Broward Central Terminal, Lauderhill Mall, Galleria Mall
50	30	30	5:20 AM - 11:50 PM	5:30 AM - 11:35 PM	8:20 AM - 8:50 PM	1,393,552	Broward Central Terminal, Sample Rd. & Dixie Hwy., Deerfield Beach/A1A
55	40	40	5:15 AM - 9:25 PM	5:50 AM - 9:15 PM	8:55 AM - 7:15 PM	522,889	Broward Central Terminal, Galleria Mall, Oakland Park Blvd. & Bayview Dr., Federal Hwy. & Commercial Blvd., Hwy. 441 & Commercial Blvd., Hiatus Rd. & NW 44 St.

Table 2-12 (Continued)
Broward County Transit Route

	Headway		Service Span				
Route	Peak (Mins.)	Off-Peak (Mins.)	Weekday	Saturday	Sunday	Annual Passengers (FY 2002)	Destinations
56	30	30	6:30 AM - 9:55 PM	6:30 AM - 7:50 PM	8:45 AM - 7:30 PM	609,214	NW 36 St. & NW 43 Ave., Florida Medical Center, Broward Mall, West Regional Terminal, Oakland Park Blvd. & Nob Hill Rd.
57	70	70	7:15 AM - 7:30 PM	8:35 AM - 6:50 PM	-	45,601	Commercial Blvd. & Hwy. 441, NW 79 Ave. & NW 57 St., Commercial Blvd. & Nob Hill Rd., Commercial Blvd. & University Dr.
60	20	30	5:05 AM - 11:05 PM	5:15 AM - 11:00 PM	10:15 AM - 7:10 PM	749,961	Atlantic Blvd. & Dixie Hwy., Pompano Beach Medical Center, Cypress Creek Tri-Rail, Broward Central Terminal
62	45	45	5:40 AM - 8:25 PM	7:00 AM - 7:50 PM	9:00 AM - 7:50 PM	410,190	Coral Square Mall, Tamarac, Cypress Creek Tri-Rail, Lauderdale-By-The-Sea, Galt Ocean Mile
72	20	20	5:30 AM - 11:45 PM	5:45 AM - 11:50 PM	8:40 AM - 9:00 PM	1,933,580	Sawgrass Mills Mall/Green Toad Entrance, Oakland Park Blvd., Galt Ocean Mile
75	60	60	5:50 AM - 8:25 PM	7:35 AM - 6:05 PM	-	66,100	West Regional Terminal, State Road 84 Loop
81	30	30	6:00 AM - 11:55 PM	5:40 AM - 11:55 PM	8:30 AM - 6:30 PM	878,161	Broward Central Terminal, NW 31 Ave. & Broward Blvd., Lauderhill Mall, NW 49th Ave & Oakland Park Blvd., NW 44 St. & Inverrary Blvd., NW 36 St. NW 43 Ave.
83	30	30	5:35 AM - 9:50 PM	5:35 AM - 9:55 PM	9:00 AM 7:35 PM	591,298	Pompano Square, Coconut Creek Pkwy. & Hwy. 441, Coral Square Mall
84	30	30	5:45 AM - 8:05 PM	5:45 AM - 8:05 PM	9:15 AM - 7:05 PM	329,314	Broward Central Terminal, Public Health Center, Ft. Lauderdale Airport Tri-Rail Station
88	45	45	6:00 AM - 7:25 PM	6:15 AM - 6:55 PM	8:15 AM - 6:40 PM	132,369	Coral Square Mall, Pine Island Rd. & Commercial Blvd., West Regional Terminal
92/94	45	45	7:50 AM - 4:25 PM	8:45 AM - 4:25 PM	12:25 PM - 6:55 PM	127,582	Century Village, Deerfield Beach Tri-Rail, Focal Point, Howard Johnson
93	90	90	9:30 AM - 4:50 PM	9:30 AM - 4:50 PM	11:00 AM - 6:00 PM	52,430	Century Village, North Broward Medical Center, Target, Pompano Square
95	90	90	8:20 AM - 5:50 PM	8:20 AM - 5:50 PM	-	45,094	Century Village, North Broward Medical Center, Pompano Square
97	60	60	10:00 AM - 4:55 PM	10:00 AM - 4:55 PM	-	20,466	Century Village, Trail Plaza, Towne Center Mall
TOTAL						32,181,013	

BCT and 20 cities in Broward County operate community bus service under an inter-local agreement. Table 2-13 identifies the community bus services.

Table 2-13
Broward County Community Bus Service

Community	Service
Coconut Creek	2 routes every 60 minute
Cooper City	1 route every 60 minutes
Coral Springs	2 routes every 60 minutes
Dania Beach	1 route every 40 minutes
Davie	1 route every 45 minutes 1 route every 30 minutes
Deerfield Beach	3 routes every 60 minutes
Fort Lauderdale	6 routes at multiple times 1 Tri-Rail shuttle route 1 demand responsive route
Hillsboro Beach	1 route every 60 minutes
Lauderdale-by-the Sea	1 route every 45 minutes 1 route every 30 minutes 1 park and ride loop
Lauderdale Lakes	2 routes every 60 minute
Lauderhill	3 routes every 45 minutes 1 route every 40 minutes 1 route every 30 minutes
Light House Point	1 route every 60 minutes
Margate	2 routes every 60 minutes 2 routes every 30 minutes
Miramar	2 routes every 60 minutes
North Lauderdale	2 routes every 45 minutes
Oakland Park	1 route every 45 minutes
Pembroke Pines	1 route every 60 minutes 1 route every 30 minutes
Plantation	2 routes every 45 minutes
Pompano Beach	1 route every 45 minutes 1 route every 30 minutes
Tamarac	2 routes every 60 minutes 1 route every 45 minutes

BCT operates three routes (10, 18, and 97) that connect with Palm Tran at locations such as Boca Town Center, Mizner Park and along Hillsborough Boulevard in north Broward. BCT also has four routes (1, 2, 9, and 18) that connect with Miami-Dade Transit in Miami-Dade County. Sixteen BCT bus routes serve Tri-Rail as shown in Table 2-14.

Table 2-14
BCT Service to SFRTA Stations

Station	BCT Route
Deerfield Beach	92
Pompano Beach	34,93, 95
Cypress Creek	60, 62
Fort Lauderdale	9, 22, 81
Fort Lauderdale/Hollywood International Airport	3, 6, 15, 84
Sheridan Street	3, 12, 17
Hollywood Street	7
Golden Glades	18

2.7.3 Miami-Dade Transit

Miami-Dade Transit (MDT) is the agency of Miami-Dade County that provides public transit service. MDT operates bus service, heavy rail service and the Metromover. Metrobus offers countywide service from Miami Beach to West Miami-Dade County and from the Middle Keys to the southern portion of Broward County. All buses are wheelchair accessible. Metrobus connects to Metrorail, Metromover and Tri-Rail. With over 900 buses, 94 Metrobus routes operate over 29 million miles per year. Several routes operate 24 hours per day.

Miami-Dade County's 22-mile, elevated rapid transit system runs from Kendall through South Miami, Coral Gables and downtown Miami, to the Civic Center/Jackson Memorial Hospital area and to Brownsville, Liberty City, Hialeah and Medley in northwest Miami-Dade, with connections to Broward and Palm Beach counties at the Tri-Rail/Metrorail transfer station. The 22 accessible Metrorail stations are about one-mile apart. Parking is available at 19 Metrorail stations, including the new Palmetto Station.

Metromover is a free automated people-mover system that serves downtown Miami, from Omni to Brickell, and connects with Metrorail at Government Center and Brickell stations. There are 21 conveniently located wheelchair accessible Metromover stations, one about every two blocks. Metromover links many of downtown Miami's major office buildings, hotels and retail centers such as the Stephen P. Clark Government Center, the Cultural Plaza (Miami Art Museum, Historical Museum, Main Library) and the Brickell business district.

Figure 1-5 shows the 2004-2005 MDT service map and Table 2-15 summarizes the MDT services.

Table 2-15
MDT Fact Sheet

System Characteristics	Metrobus	Metrorail	Metromover
Operating Hours	Some routes 24 hours	5 AM - midnight	5 AM to midnight
Number of Routes	100	1	3
Number of Stops	8825	22	21
Peak Headways	7.5-70 minutes	6 minutes	2.5 minutes

Table 2-15 (Continued)
MDT Fact Sheet

System Characteristics	Metrobus	Metrorail	Metromover
Weekend Headways	12-60 minutes	15 minutes	2.5 minutes
Route miles	1370 miles	22.4 miles	4.4 miles
Peak Vehicle Requirement	631	106	18
Total Fleet Size	957	136	29
Annual Revenue Miles	31 million	8 million	1 million
Annual Boardings	64.5 million	14.3 million	6.8 million
Park and Ride Spaces	1,716	7,932	0
Annual Operating Expenses	$254 million	$93 million	$26 million
Annual Operating Revenues	$47 million	$1 million	$0
Base Fare	$1.25	$1.25	Free

Figure 2-10
MDT Transit

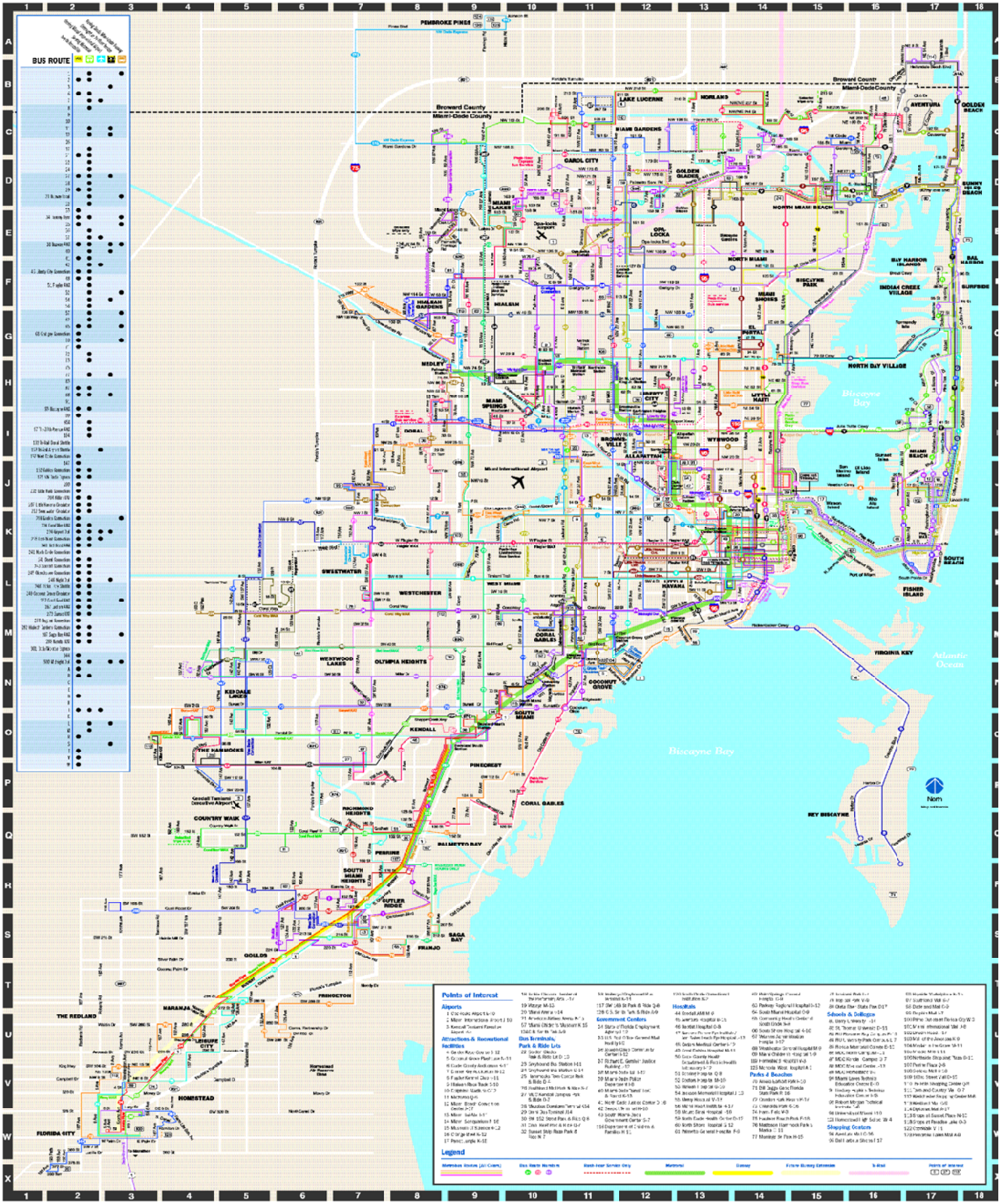


Table 2-16
MDT Service to SFRTA Stations

Stations	Routes
Golden Glades	E, V, 22, 42, 77, N. Dade Connection, 95 Expressway (additional fare)
Opa-Locka	E, 32, 42
Metrorail Transfer	L, 42, Metrorail
Hialeah Market	J, 36, 42
MIA	37, E/W Connector

2.8 Traffic

Tri-Rail was initiated in 1989 as a temporary mitigation measure for the reconstruction of I-95. It has remained in operation and has become a critical part of the transportation in South Florida because of the congestion on I-95. South Florida only has two north-south expressways, so Tri-Rail is a critical part of that north-south system.

The roadway system that serves most of the corridor is characterized by limited access arterial grids with discontinuous, curvilinear, internally-oriented local roads. The road pattern is very difficult for local bus service.

Table 2-17 shows the volumes of traffic in the vicinity of Tri-Rail and I-95. Figures 1-11 through 1-13 illustrates those segments of the South Florida transportation network that are currently operating at a level of service (LOS) F, which is the traffic engineering designation for a roadway segment that carries more vehicles than the roadway was designed for. LOS F generally indicates traffic is operating at severe stop-and-go conditions.

Table 2-17
Average Annual Daily Traffic (AADT) in the Tri-Rail Corridor

I-95		East West Streets	
Location	AADT	Location	AADT
Palm Beach County			
Palm Beach/Okeechobee	148,631	Palm Beach Boulevard	41,000
Okeechobee/Belvedere	140,000	Okeechobee Boulevard	68,000
Belvedere/Southern Blvd	148,500	Belvedere Road	32,000
Southern/Forest Hill	174,500	Southern Blvd. E. of I-95	29,000
Forest Hill/ 10 Ave. N.	166,500	Forest Hill Boulevard	30,500
10 Ave. N./Lake Worth	163,000	10 Ave. N.W. of I-95	42,500
6 Ave. S./Lantana Road	168,500	10 Ave. N. E. of I-95	28,000
Lantana Rd/Hypoluxo Rd	153,500	Lake Worth Road	22,000
Hypoluxo/Gateway Blvd	141,000	6 Avenue South	27,500
Gateway/Boynton Beach	154,000	Lantana Road	34,000
Boynton Bch/Woolbright	159,500	Hypoluxo Road	33,000
Lawson Blvd/Linton	160,000	Gateway Blvd W. of I-95	35,500
Linton Blvd/Clint Moore	180,500	Gateway Blvd E. of I-95	23,500
Clint Moore/Yamato	181,500	Boynton Beach Blvd	44,500
Spanish Rvr Dr/Glades	186,000	Woolbright	38,500
Glades/Palmetto Park Rd	195,000	Atlantic Avenue	29,000
		Linton Boulevard	36,000
		Yamato	43,500
		Glades Road	63,000
		Palmetto Park Road	59,000

Table 2-17 (Continued)
Average Annual Daily Traffic (AADT) in the Tri-Rail Corridor

I-95		East West Streets	
Location	AADT	Location	AADT
Broward County			
Palmetto Park/Hillsboro	203,000	Hillsboro Blvd e of I-95	63,000
Hillsboro/Deerfield	206,000	Deerfield e of I-95	28,500
Green Rd/Sample Rd	200460	Sample Rd w of I-95	58,000
Sample Rd e of I-95	48,500	Copans Rd w of I-95	45,500
Sample Rd/Copans Rd	228,000	Atlantic Blvd w of I-95	52,000
Copans Rd/NW 15 St.	243,000	Cypress Ck. Rd w of I-95	50,500
Race Tk/McNab Rd	246,000	Commercial w of I-95	62,000
Cypress Ck/Commercial	260,000	Oakland Pk. e of I-95	69,500
Prospect Rd/NW 38 ST	259,000	Sunrise Blvd w of I-95	55,500
NW 38 St/NW19 St	278,000	Sunrise Blvd e of I-95	62,500
Sunrise Blvd/Broward	288,000	Broward Blvd e of I-95	71,500
Broward Blvd/Davie Blvd	303,000	Davie Blvd w of I-95	37,000
Davie Blvd/Marina Blvd	301,000	Griffin Rd e of I-95	28,000
Lee Wagner/Griffin Rd	275,000	Stirling Rd w of I-95	50,000
Griffin Rd/Stirling Rd	279,000	Sheridan e of I-95	43,000
Stirling Rd/Hollywood	282,000	Hollywood Blvd e of I-95	45,000
Hollywood/Pembroke Rd	259,000	Pembroke Rd e of I-95	42,000
Pembroke Rd/Hallandale	239,394	Hallandale e of I-95	61,890
Miami-Dade County			
NW 199 St/NW 183 St	176,000	NW 183 St E of I-95	47,000
NW 199 St/NW 183 St	202,000	NW 183 St W of I-95	40,000
NW 183 St/Golden Glades	185,000	NE 167 St	30,000
NW 151 St/NW 146 St	237,000	NW 125 St E of I-95	36,500
NW 151 St/NW 146 St	272,356	NW 119 St.	41,000
NW 135 St/NW 125 St	221,000	NW 103 St E of I-95	12,000
NW 125 St/NW 103 St	220,000	NW 103 St W of I-95	32,000
NW 95 St/NW 82 St	262,000	NW 36 St E of I-95	14,700
NW 79 St/NW 62 St	225,000	NW 36 St W of I-95	16,400
NW 62 St/Hialeah	214,000	I-395 and 836 E of I-95	106,500
SR 112/836	207,000		

Figure 2-11
Miami-Dade County Major Roadway LOSF

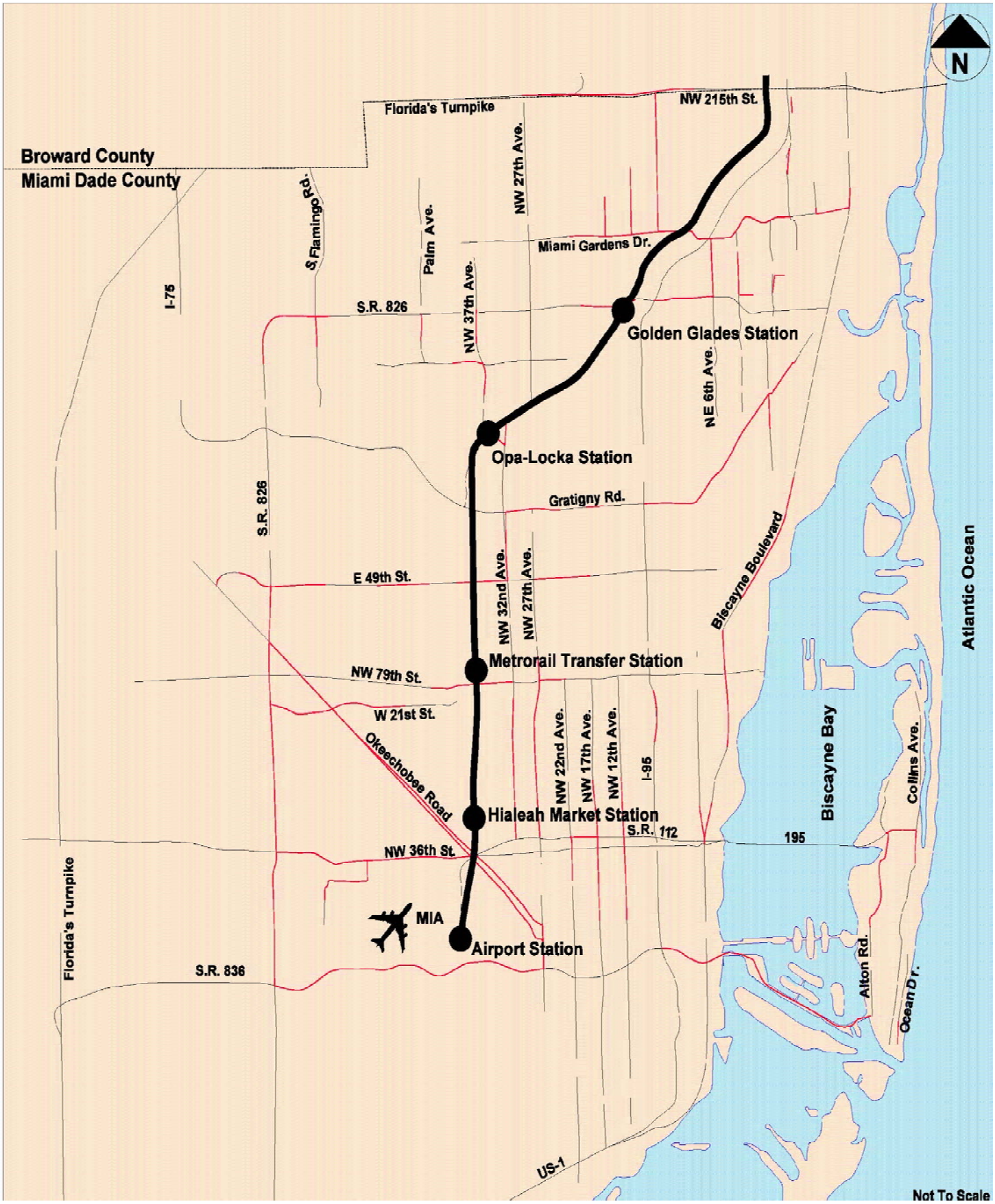


Figure 2-12
Broward County Major Roadway LOSF

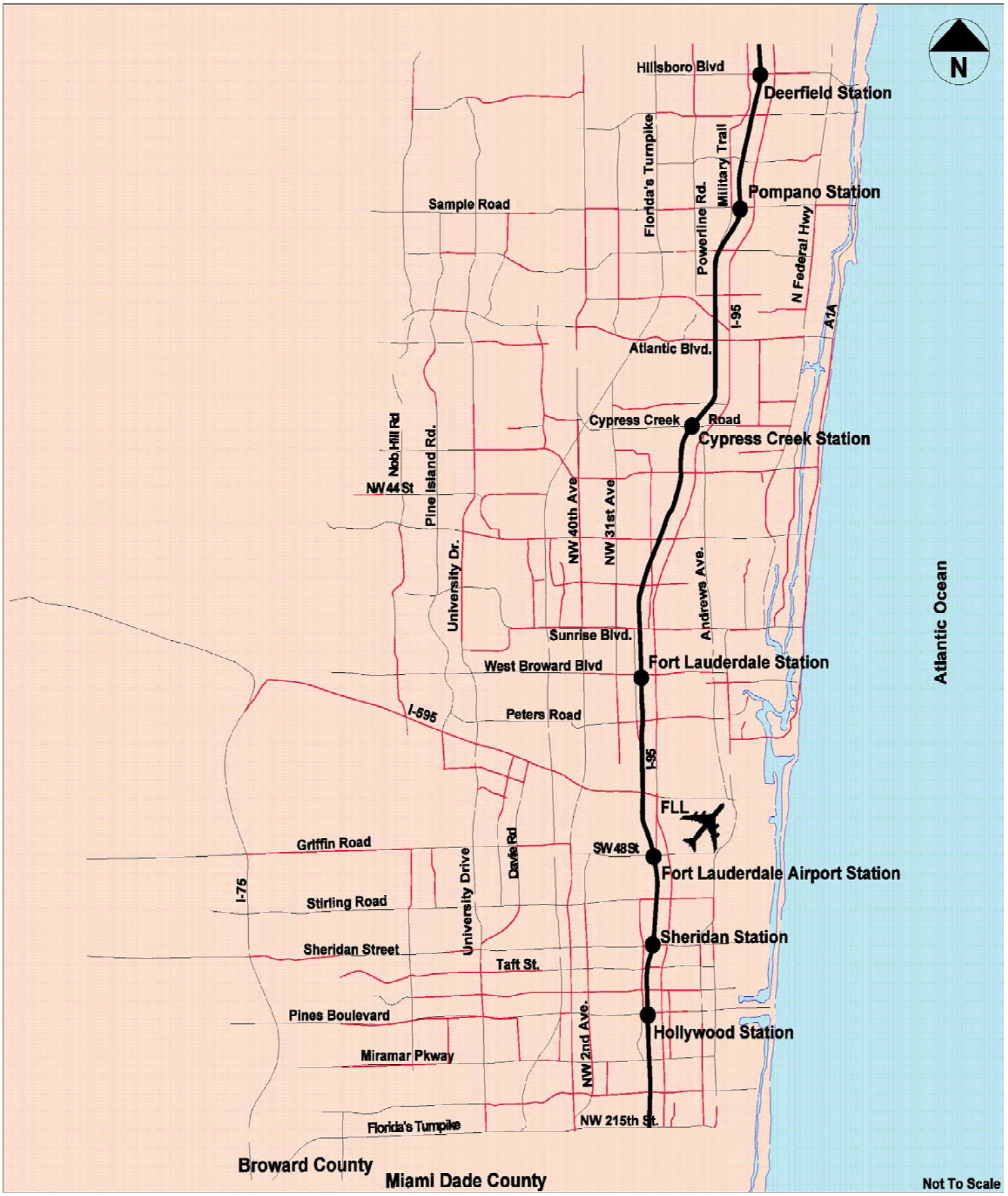
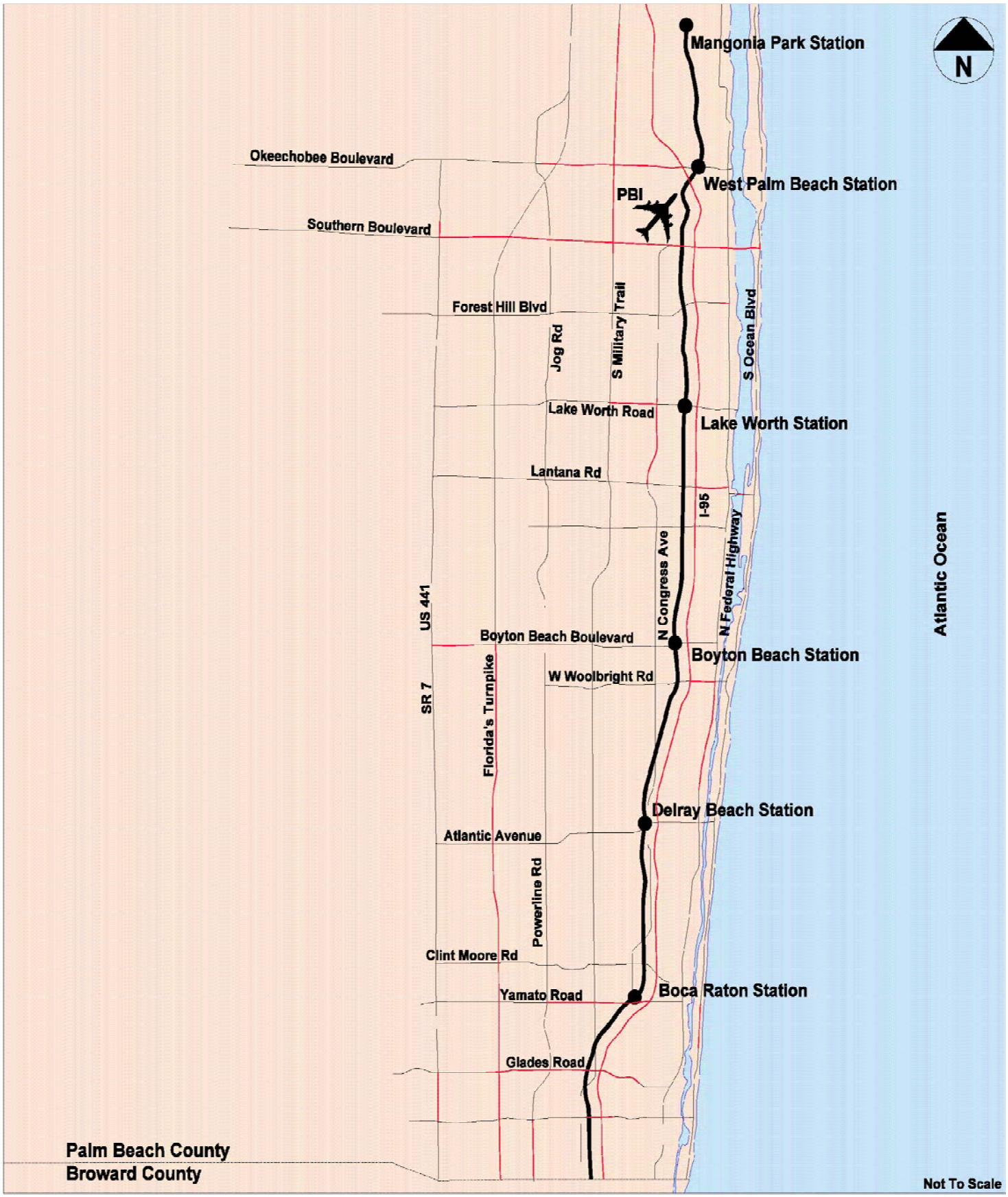


Figure 2-13
Palm Beach County Major Roadway LOSF



2.9 Current Tri-Rail Operations

2.9.1 Schedule

The commuter rail service is provided by a fleet of 11 diesel-electric locomotives, 11 bi-level cab cars and 15 bi-level coaches. It operates as much as possible on a morning and afternoon clock-face schedule, meaning that trains arrive at a station at the same time each hour. As an example, a patron only needs to know that the northbound train, at a given station, is usually available at thirteen minutes after the hour. Tri-Rail operates 14 round trips on weekdays, 7 round trips on Saturdays and 6 round trips on Sundays. The current operating schedule is shown in Table 2-18.

Table 2-18
2004-2005 Operating Schedule

Southbound Trains			Northbound Trains		
Train	Mangonia Park	MIA	Train	MIA	Mangonia Park
601	4:20 AM	6:19 AM	600	4:13 AM	6:12 AM
603	5:40 AM	7:39 AM	602	5:13 AM	7:12 AM
605	6:40 AM	8:39 AM	604	5:43 AM	7:44 AM
607	7:40 AM	9:39 AM	606	6:13 AM	8:12 AM
609	8:40 AM	10:39 AM	608	7:13 AM	9:12 AM
611	9:40 AM	11:39 AM	610	8:13 AM	10:12 AM
613	10:40 AM	112:39 PM	612	9:13 AM	11:12 AM
615	1:56 PM	3:55 PM	614	10:13 AM	12:12 PM
617	2:56 PM	4:55 PM	616	11:13 AM	1:12 PM
619	3:26 PM	5:25 PM	618	1:29 PM	3:28 PM
621	3:56 PM	5:55 PM	620	3:29 PM	5:28 PM
623	4:56 PM	6:55 PM	622	4:29 PM	6:28 PM
625	5:56 PM	7:55 PM	624	5:29 PM	7:28 PM
621	6:56 PM	8:55 PM	620	6:29 PM	8:28 PM
621	7:56 PM	9:55 PM	620	7:29 PM	9:28 PM

A full 71 mile one way trip is completed in 119 minutes; the round trip takes 4 hours and 26 minutes including layover and recovery time. The standard train operates in a push-pull configuration, with a diesel locomotive, two coach cars and a cab car. During peak periods up to two additional coach cars can be added to the train set to accommodate seated loads. The average running speed is 35.5 miles per hour and the average station spacing is 3.9 miles.

2.9.2 Fleet

Tri-Rail train service operates in a push-pull configuration with the locomotive always at the north end of the train. Trains are operated from the cab car in the southbound direction.

Train operations are such that the 4:20 AM southbound train from Mangonia Park turns around at Miami International Airport as the 7:13 AM northbound train. Similarly, the 4:13 northbound train from Miami turns around in Mangonia to become the 6:40 AM southbound train. The schedule shows that Tri-Rail operates six complete consists (trains) – two southbound (the 4:20 AM and the 5:40 AM) and four northbound (4:13, 5:13, 5:43 and 6:13 AM). A consist is made up of one locomotive and one cab car and two coaches. The six trains leave 5 spare locomotives and 5 spare cab cars. However, the six trains would only leave 3 spare coaches.

Table 2-19 shows the vehicle inventory for the SFRTA.

Table 2-19
Vehicle Inventory

Identification	Year Built	In-Service	Average Annual Miles	Estimated Miles
Locomotive				
801 - 805 MK Locomotive	1974	1989	100,000	1,136,000
807 - 809 MK Locomotive	1992	1992	100,000	920,000
810 - 811 EMD Locomotive	1980	1998	100,000	2,488,000
Coaches				
1001 - 1012 Bombardier Coach	1988	1989	100,000	1,400,000
1013 - 1015 Bombardier Coach	1992	1992	100,000	1,200,000
Cab Cars				
501 - 506 Bombardier Cab Car	1988	1989	100,000	1,200,000
507 - 511 Bombardier Cab Car	1996	1996	100,000	800,000

2.9.3 Shuttle Bus Operations

Transit feeder service to Tri-Rail stations is provided by a combination of service by the three local county operators – MDT, BCT and Palm Tran and by shuttles operated directly by Tri-Rail. Within the counties, various operational agreements exist, but basically SFRTA provides funding to the local transit agencies to either serve Tri-Rail stations as an additional stop on an existing route, or to operate shuttle service oriented to directly serve a Tri-Rail station. As a part of the agreement, passengers transferring from the County buses are entitled to a reduced train fare, as well as transfers to the local bus service within a quarter mile of the Tri-Rail stations. In Palm Beach County, almost all of the service is provided by regular Palm Tran routes. In Broward County, roughly half of the service to the Tri-Rail stations is supplied by regular BCT routes, while the other half of the service is supplied directly by Tri-Rail shuttles. In Miami-Dade County, the service is mostly operated by MDT, with only a couple of Tri-Rail Shuttles in operation. SFRTA transfers $666,660 to each county to operate Tri-Rail feeder routes. Table 2-20 and Figures 1-14 through 1-16 show the shuttle bus routes.

Table 2-20
Shuttle Bus Routes

Route	Station	Average Monthly Ridership	Route	Station	Average Monthly Ridership
36 ST	Hialeah Market	802	DFB2	Deerfield Beach	940
MIA	Miami Airport	11,975	PB1	Pompano Beach	1,124
SFEC	FLA	4,075	CC1	Cypress Creek	898
FLTMA	Ft. Lauderdale	917	CC2	Cypress Creek	1,080
SHE	Sheridan Street	556	CC3	Cypress Creek	1,041
Boca Center	Boca Raton	618	FtL	Fort Lauderdale	7,082
T-Rex	Boca Raton	3,561	FLA	FLA	5,865
DFB1	Deerfield Beach	811			

2.9.4 Passenger Facilities

SFRTA maintains 17 stations, each of which provides a high degree of passenger comfort and amenities. Currently, SFRTA is in the process of completing its double tracking construction project. Part of that project was to replace the original temporary single platform stations with double platform stations, with pedestrian bridges across the railroad tracks. Table 2-21 details the passenger amenities associated with each station, as of January 2005. Many of the stations are nearing completion, therefore this information will change. The table has tried to indicate current and future passenger facilities for all stations that are nearing completion.

Figure 2-14
Tri-Rail Miami-Dade County Shuttle Service

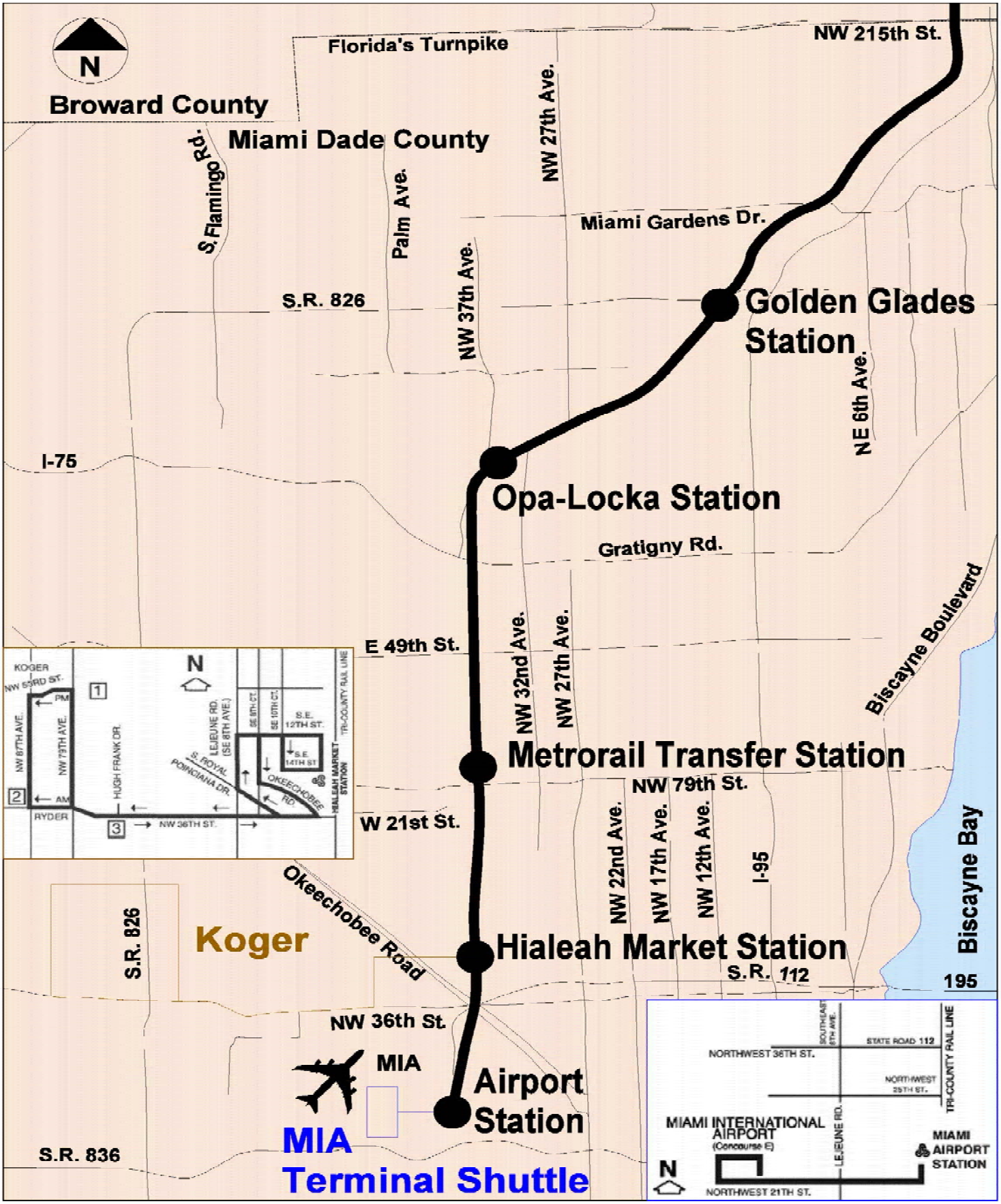


Figure 2-15
Tri-Rail Broward County Shuttle Service

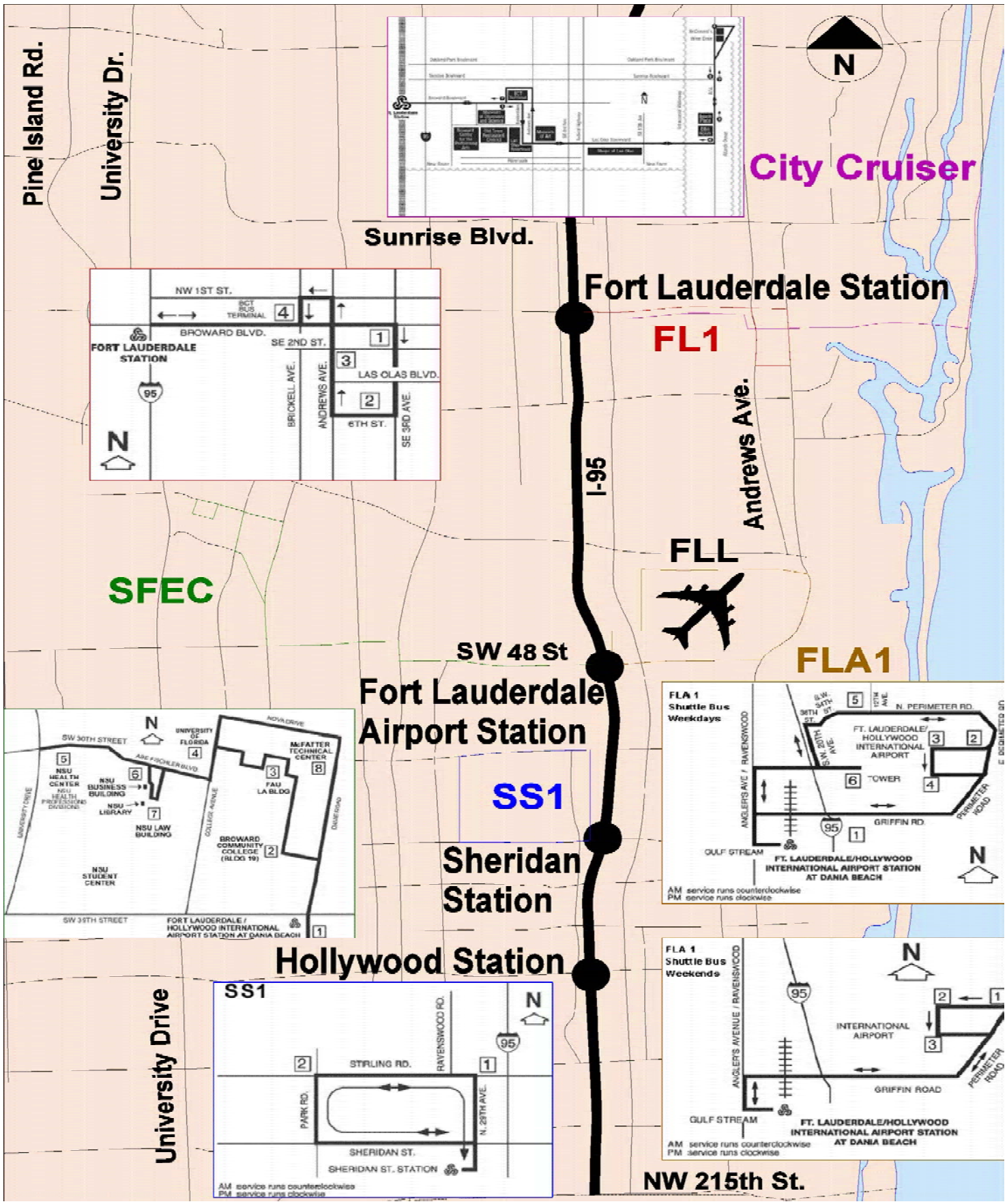


Figure 2-15A
Tri-Rail Broward County Shuttle Service

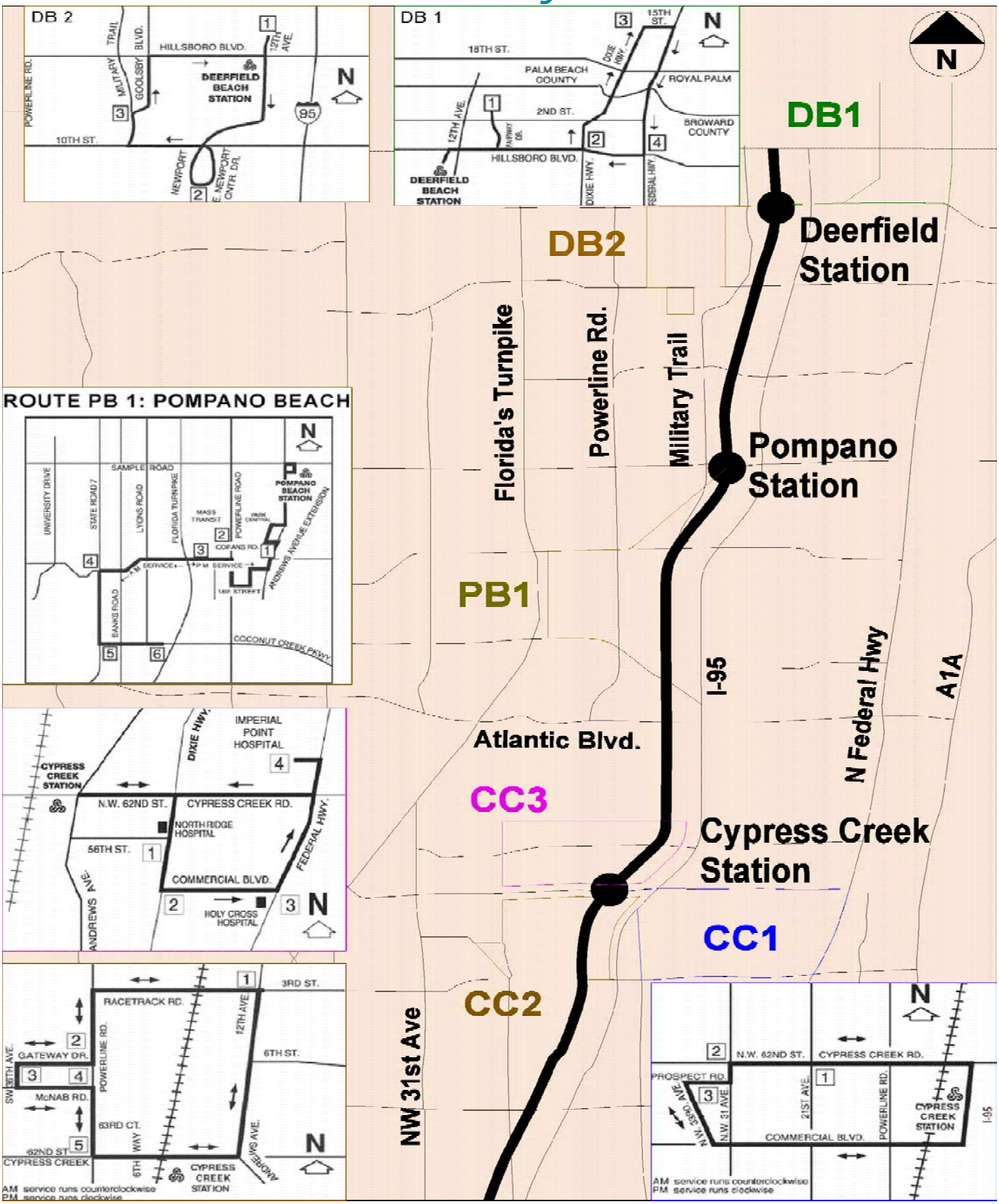


Figure 2-16
Tri-Rail Palm Beach County Shuttle Service

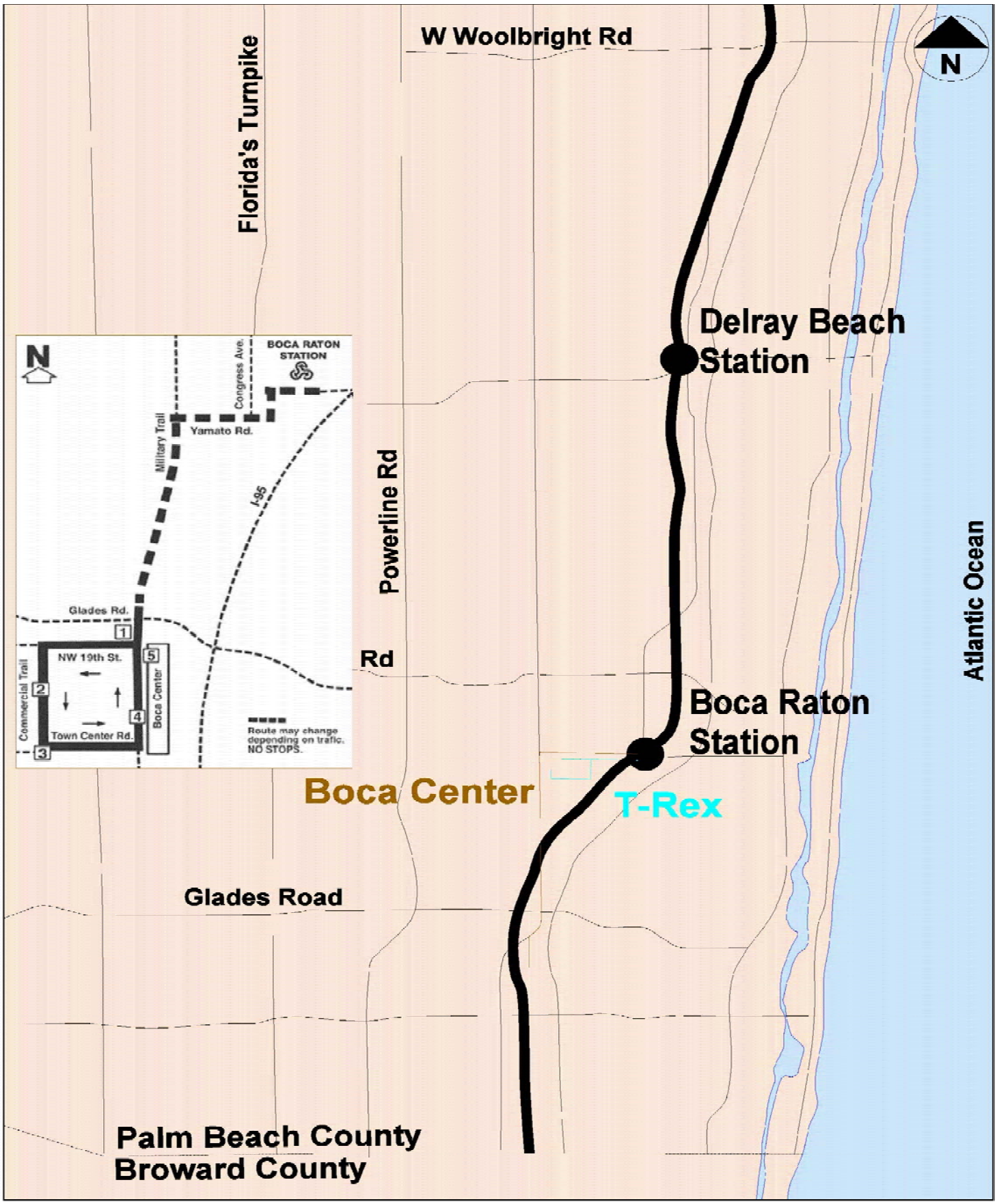


Figure 2-16A
Tri-Rail Palm Beach County Shuttle Service

Table 2-21
Station Amenities

Amenities	Miami Airport	Hialeah	Tri-Rail Transfer	Opa Locka	Golden Glades	Hollywood	Sheridan	FLA	Ft. Lauderdale	Cypress Creek	Pompano Beach	Deerfield Beach	Boca Raton	Delray Beach	Boynton Beach	Lake Worth	West Palm	Mangonia Park
Covered benches	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Uncovered benches			X	X		X	X				X		X		X	X		X
Vending machines	X		X			X	X	X	X	X	X	X	X	X	X	X	X	X
Phones	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Drinking fountain	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Trash receptacles	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Handicap accessible ramp	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Double loaded accessible platform	X			X	X		X	X	X		X	X		X	X	X	X	X
Audio messaging	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Video messaging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Manned ticket sales window	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Automated ticket machines	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Newspaper stands	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Schedule information window	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Biking rack	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Restrooms	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adequate lighting	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Single platform	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Center platform	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Complete covered platform	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Double track	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Double track (Under construction)	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dual tri-rail Amtrak station	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Pedestrian bridge	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bus pullouts	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Elevators	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Stairs	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Escalators	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

2.9.5 Intelligent Transit System (ITS) Applications

Tri-Rail is making strides in integrating the application of advanced computer, electronics and communications technologies to increase the safety and efficiency of surface transportation. They have made a significant investment in ITS programs.

Tri-Rail, as well as MDT and BCT, has implemented the Computer Aided Dispatch/ Automated Vehicle Location (CAD/AVL) systems on their fleet. The CAD/AVL systems provide the supervisor with the capability of tracking the location of the fleet in real-time. Global Positioning Satellite (GPS) devices track the trains enabling real-time information to be transmitted to patrons at the stations and bus operators connecting to trains to know when the trains are running off-schedule.

All of the new stations are equipped with audio and visual information systems to provide arrival information for the next train.

2.9.6 Ridership

Despite the on-going construction on the SFRTA tracks, and the fact that no additional service has been added, ridership has grown by over 25% during the last five-years. Table 2-23 shows the five year increase in boardings by county.

Table 2-23
Growth in Boarding's

County	2000 Daily Boarding's	2004 Daily Boarding's	% Growth
Palm Beach	3,066	4,007	30.7%
Broward	2,468	3,107	25.9%
Miami Dade	1,975	2,378	20.4%
	7,509	9,492	26.4%

The core of any commuter rail line operation is the home to work trips. By examining the July 2004 AM peak hour boarding's, we can determine where the majority of work trips originate. Table 2-24 shows the growth in AM boarding's by station and ranks them by origins.

Table 2-24
Boarding's by Station

Station	Origin Rank	2000 AM Boardings	2004 AM Boardings	% Change
Fort Lauderdale	1	284	261	-8%
Hollywood	2	188	232	23%
Metrorail Transfer	3	244	222	-9%
Cypress Creek	4	169	174	3%
Lake Worth	5	145	169	16%
Golden Glades	6	165	166	1%
Pompano Beach	7	177	154	13%
West Palm Beach	8	103	144	40%
Deerfield Beach	9	128	142	11%
Boynton Beach	10	121	139	15%
Miami Airport	11	82	124	51%
Fort Lauderdale Airport	12	89	115	29%
Delray Beach	13	87	112	29%

Table 2-24 (Continued)
Boarding's by Station

Station	Origin Rank	2000 AM Boardings	2004 AM Boardings	% Change
Sheridan Street	14	163	110	-32%
Boca Raton	15	82	97	18%
Mangonia Park	16	70	81	16%
Opa-Locka	17	62	74	19%
Hialeah Market	18	24	32	33%
		2,383	2,548	7%

Destinations on the route are determined by AM peak period alightings. Table 2-25 shows the rank of station by destinations. It is assumed that these are the stations with the greatest demand for facilities to support the work end trip. This table also shows the change in destination trips to the stations during the previous five years.

Table 2-25
Alightings by Station

Station	Destination Rank	2000 AM Alightings	2004 AM Alightings	% Change
Metrorail Transfer	1	460	369	-20%
Boca Raton	2	243	274	13%
West Palm Beach	3	227	239	5%
Cypress Creek	4	207	199	-4%
Fort Lauderdale	5	173	188	8.7%
Pompano Beach	6	145	153	5.5%
Miami Airport	7	147	147	0%
Deerfield Beach	8	122	145	19%
Fort Lauderdale Airport	9	86	127	47.7%
Hollywood	10	79	115	45.5%
Delray Beach	11	87	112	28.7%
Mangonia Park	12	83	109	31.3%
Lake Worth	13	49	83	69.4%
Golden Glades	14	60	77	28.3%
Boynton Beach	15	82	73	-11%
Sheridan	16	58	67	15.5%
Hialeah Market	17	47	42	-10.6%
Opa-Locka	18	21	32	52.4%
		2,376	2,551	7.4%

The two previous tables show that the volume of home-to-work trips has only grown by 7% during the previous five years. The earlier table shows that total trips have grown by 25%, indicating that the majority of growth in the ridership is for the non-work trip, such as school, recreation and shopping.

The two previous tables show that the volume of home-to-work trips has only grown by 7% during the previous five years. The earlier table shows that total trips have grown by 25%, indicating that the majority of growth in the ridership is for the non-work trip, such as school, recreation and shopping.

Overall, ridership varies by station and by direction. Within Palm Beach County, ridership also varies by season. Given a large change in seasonal ridership you can determine which Palm Beach County stations are impacted by students. The following table shows the variation between alightings and boardings between January 2004 ridership and July 2004 ridership. A large change in the number of AM peak hour boarding's indicates a large number of students coming from home. A large number of alightings in the AM peak hour represents a large number of students going to school. School students originating in Boynton Beach, Boca Raton and Delray Beach heavily contribute to the ridership in Palm Beach County. West Palm Beach and Mangonia Park draw the majority of the Palm Beach Student riders.

Table 2-26
Estimation of School Trips

Station	January 2004 AM Peak	July 2004 AM Peak	Difference	Rank
Mangonia Park				
Boardings	86	81	5	6
Alightings	357	109	248	2
West Palm Beach				
Boardings	182	144	38	5
Alightings	554	239	315	1
Lake Worth				
Boardings	268	169	99	4
Alightings	178	83	95	3
Boynton Beach				
Boardings	370	139	231	1
Alightings	103	73	30	4
Delray Beach				
Boardings	228	112	116	3
Alightings	141	112	29	5
Boca Raton				
Boardings	242	97	145	2
Alightings	282	274	8	6

2.10 Related Plans

2.10.1 Regional Plans

FDOT's recently initiated FEC Corridor Alternative Analysis Study could have major implications for existing Tri-Rail service. Although it is too early to even speculate about the impacts on Tri-Rail operations, ridership and facilities, it is clearly evident that this study must be closely coordinated with SFRTA.

2.10.2 Palm Beach County

The Transit Development Plan for Palm Tran covers the period from 2004 to 2008. Because of the close operating relationship between Tri-Rail and Palm Tran, improvements to Palm Tran routes will improve accessibility to Tri-Rail. Table 2-27 shows the proposed improvements to the Palm Tran system.

Table 2-27
Planned Palm Tran Service Improvements

Route	Service Improvement	Planned Start Date
#1	20 minute headways all day weekdays	FY 2004
#1	30 minute headways Sundays	FY 2005
#1	15 minute all day weekdays	FY 2007
#40	Convert to Express	FY 2005
#2	20 minute headways all day weekdays	FY 2007
#3	20 minute headways all day weekdays	FY 2007
#30	30 minute headways all day weekdays	FY 2005
#30	20 minute headways all day weekdays	FY 2008
#46	30 minute headways all day weekdays	FY 2005
#46	20 minute headways all day weekdays	FY 2008
#31	20 minute peak/30 minute off-peak weekdays	FY 2005
#31	20 minute headways all day weekdays	FY 2008
#43	20 minute peak/30 minute off-peak weekdays	FY 2005
#43	30 minute headways all day Saturday	FY 2005
#43	20 minute headways all day weekdays	FY 2008
#62	20 minute peak/30 minute off-peak weekdays	FY 2005
#62	30 minute headways all day Saturday and Sundays	FY 2005
#62	20 minute headways all day weekdays	FY 2008
#71	20 minute peak/30 minute off-peak weekdays	FY 2005
#71	20 minute headways all day weekdays	FY 2008
#81	20 minute peak/30 minute off-peak weekdays	FY 2005
#81	20 minute headways all day weekdays	FY 2008
#94	20 minute peak/30 minute off-peak weekdays	FY 2005
#94	20 minute headways all day weekdays	FY 2008
#53	Reduce headways from 60 to 30 minutes	FY 2005
#33	Reduce headways from 60 to 30 minutes	FY 2006
#44	Reduce headways from 60 to 30 minutes	FY 2006
#42	Reduce headways from 60 to 30 minutes	FY 2006

The Palm Tran TDP also includes the implementation of a Bus Rapid Transit Project along Okeechobee Boulevard, starting in FY 2006. It would run 13.5 miles from Wellington Mall to the West Palm Beach Tri-Rail Station. This study was originally recommended in the Regional Transportation Organization (forerunner of SFRTA) South Florida Transit Analysis Study and is also included in the Palm Beach MPO's 2030 Long Range Transportation Plan (LRTP).

2.10.3 Broward County

Broward County MPO is conducting a study for the development of a project called the State Route 7 Rapid Bus Project, which would implement BRT between Palm Beach County and The Golden Glades Intermodal Center. The State Route 7 Rapid Bus Project would operate about 2-miles west of and parallel to Tri-Rail. The implementation of this project would also have impacts on Tri-Rail ridership.

The Broward County Transit TDP, for fiscal years 2005 to 2009, proposes the following service improvements that will improve overall transit access to Tri-Rail:

Table 2-28
Proposed BCT Service Improvements

Route	Weekday Headway	Proposed Headway	Sat/Sunday Headway	Proposed Headway
1	15	10		
2	20	15	40/-	30/-
3	60	30		
5	60	30		
6			-/60	-/45
7	30	20	-/40	-/30
9	40	30	60/60	40/40
10	30	20	-/45	-/30
11	30	20	-/60	-/30
12	40	30	45/60	30/45
14	20	15	40/40	30/30
15	40	30	-/60	-/45
18	15	10		
20	40	30		
28	30	20		
30			-/45	-/30
31	20	15	45	30
36	20	10		
40	30	15	-/40	-/30
50	30	15	40/40	30/30
55	40	30	60/60	40/40
57	70	40		
60	30	15		
62	45	30		
72	20	10		
83	30	20	-/60	-/45
88	45	30	45/-	30/-

In addition to the service improvements described above, BCT intends to provide five new routes. Route 4 is proposed to operate between the Galleria Mall and the Aventura Mall on 30 minute headways. A new Route 44 would operate between Margate and Sawgrass Mall on 30 minute headways. A new Route 89 would operate east/west on Hillsboro Boulevard on 30 minute headways providing additional new service to a Tri-Rail station. The new Route 201 would run east/west on Stirling Road at 30 minute headways, which could provide better access from both the Ft. Lauderdale-Hollywood International Airport (FLA) station and the Sheridan Street Station. Proposed Route 202 would run on 30 minute headways on Griffin Road and improve service to FLA Station.

2.10.4 Miami-Dade County

There are a number of plans and projects within Miami-Dade County that will impact Tri-Rail facilities and projects. Chief among them is the Miami Intermodal Center (MIC), which is currently under-construction just east of the development of the Miami International Airport (MIA). The MIC is a project that was planned and designed by FDOT and was intended to reduce the curbside needs at MIA. The MIC will be connected to the air terminals via a people mover known as the MIA-Mover. All rental car activity will be relocated to the MIC and passengers will be encouraged to drop-off at the MIC and use the MIA-Mover to get to the terminals. The MIC will be located near the site of Tri-Rail's MIA station, thus the station will be relocated to the north to accommodate construction of the MIC. MIA-Mover will provide improved connections to the terminal for Tri-Rail passengers and should increase the number of passengers using the MIA station. The MIA-Mover will eliminate the need for the MIA shuttle service.

MDT has a major project that extends the Stage I Metrorail from their Earlington Heights station to the MIC. This project could appear to cause a major shift in travel patterns on Metrorail and Tri-Rail. It will provide a second transfer point between Tri-Rail and Metrorail. Currently passengers from the Airport could take Tri-Rail from the MIA station to the Metrorail Transfer station, then catch Metrorail to other destinations on Metrorail. A direct Metrorail connection to the Airport would have an impact of eliminating that Tri-Rail trip between the Airport and Metrorail Transfer; however, this does not seem to be a major loss since a recent survey showed only 4 passengers out of 900 surveyed made trips between those two stations. This improvement will make the MIC and the MIA-Mover more viable, but it should not impact Tri-Rail ridership.

MDT has another Metrorail extension project locally known as the North Corridor. This project connects the Broward County Line to the Metrorail facility at Martin Luther King Jr. Station via NW 27 Avenue. The Opa-Locka stations, for both Tri-Rail and Metrorail, are about six blocks apart, even though the Metrorail alignment goes directly over the Tri-Rail alignment. A good connection at this location could improve the connections between the two facilities and would save patrons a couple of minutes, as opposed to the transfer at Metrorail Transfer Station. However, the need for shuttle service between the two Opa-Locka facilities kills any time advantage that would exist for transfers here. This transfer would be of benefit to commuters bound for MDC-North Campus, but it would not likely result in a major increase in Tri-Rail riders. It would require additional Tri-Rail facilities in the form of new shuttle service.

Table 2-29
MDT Bus Routes

Tri-Rail Station	MDT Routes	Weekday Headway
Golden Glades Station	22	15 minutes
	42	30 minutes
	105 – Route E	30 minutes
	122 – Route V	30 minutes
	246 – Night Owl	60 minutes
	241 - North Dade Connection	30 minutes
Opa-Locka Station	32	15 minutes
	42	30 minutes
	105 – Route E	30 minutes
Metrorail Transfer Station	42	30 minutes
	112 – Route L	10 minutes
	500 – Midnight Owl	60 minutes
Hialeah Station	36	20 minutes
	42	30 minutes
	46 – Liberty City Connection	30 minutes
	110 – Route J	15 minutes
Miami Airport Station	37	30 minutes
	236 – Airport Owl	60 minutes
	238 – East-West Connection	30-60 minutes

3. PUBLIC INVOLVEMENT

3.1 Customer Surveys

Nearly identical surveys of Tri-Rail users were conducted in December 2000 and again in December 2004 - nearly five-years apart. A copy of the survey form is found on the following page is Exhibit 3-1. In 2002, Tri-Rail began construction of the Segment 5 Double Tracking Project. As previously shown, ridership has increased by 25% during 2000-2004 despite constructions, activities and associated delays. In 2000, 560 surveys were collected and in 2004, 920 surveys were collected. During that time, the overall profile of the typical Tri-Rail commuter changed dramatically. The primary origin of patrons shifted from Palm Beach to Broward County. The importance of the stations in the center of the system became more pronounced as the end stations lost some of their dominance.

According to the survey results from December 2004, the typical Tri-Rail patron is now a male Hispanic with a high school diploma earning under $25,000 per year. The second most typical patron is a Caucasian male, with some college education, earning $36,000 to $50,000 per year. In 2000, the typical Tri-Rail patron was a middle-aged, white male executive, with a college degree.

It was clear from the December 2004 surveys that patrons earning the highest annual salaries were very satisfied with Tri-Rail service and those patrons earning the lowest incomes were most dissatisfied with the service.

3.1.1 Origin-Destination Results

The survey provided origin-destination information for stations along the system. Table 3-1 shows the top ten origin-destination pairs by direction. Table 3-2 shows the origin-destination trip table for the entire system.

Table 3-1
Top 10 Origin-Destination Pairs

Southbound		Northbound	
Origin	Destination	Origin	Destination
Hollywood	Metrorail Transfer	Fort Lauderdale	Boca Raton
Fort Lauderdale	Metrorail Transfer	Metrorail Transfer	Fort Lauderdale Airport
Cypress Creek	Metrorail Transfer	Metrorail Transfer	Fort Lauderdale
West Palm Beach	Metrorail Transfer	Fort Lauderdale	Delray Beach
Boca Raton	Metrorail Transfer	Pompano Beach	West Palm Beach
Golden Glades	Metrorail Transfer	Metrorail Transfer	Sheridan
Boynton Beach	Metrorail Transfer	Golden Glades	Boca Raton
Pompano Beach	Metrorail Transfer	Golden Glades	Delray Beach
Deerfield Beach	Metrorail Transfer	Metrorail Transfer	Hollywood
West Palm Beach	Miami International Airport	Lake Worth	Mangonia Park

South Florida Regional Transportation Authority Survey

SFRTA is planning for the future. To do this we need to learn more about your trip. Please complete this survey and return it to the surveyor as you leave the train. Complete as many questions as your time allows. WE DON'T NEED YOUR NAME AND ALL INFORMATION IS CONFIDENTIAL.

1. Where were you when you started this trip?

____ home ____ recreational
____ work ____ school
____ shopping ____ airport
____ medical/dental

Name or address of the place you checked, or nearest intersection.

_____

2. At what station did you board the train?

_____

3. How did you arrive at the station where you boarded the train?

____ walked ____ Tri-Rail shuttle
____ dropped off ____ taxi
____ drove ____ bicycle
____ bus ____ other

4. What is the final destination for this trip?

____ home ____ recreational
____ work ____ school
____ shopping ____ airport
____ medical/dental

Name or address of the place you checked, or nearest intersection.

_____

5. At what station will (or did) you get off the train?

_____

6. How will you get from Tri-Rail to the place you are going?

____ walked ____ Tri-Rail shuttle
____ picked-up ____ taxi
____ drive ____ bicycle
____ bus ____ other

7. How many times today will you ride Tri-Rail ?

____ 1 ____ 2 ____ 3 or more

8. How frequently do you ride Tri-Rail? (Circle one)

Daily Occasionally
Weekdays Weekends

9. How long have you been riding Tri-Rail?

____ First time ____ less than one year
____ One year + ____ 3 years +

10. How many people are you traveling with (counting yourself)?

_____ 1 _____ 2 _____ 3

11. How do you rate your overall satisfaction with Tri-Rail? (Circle one)

Excellent
Very good
Good
Fair
Poor

OVER

12. Please rate Tri-Rail on each of the categories below. Check one answer for each category:

Category	Excellent	Very good	Good	Fair	Poor
On-time performance	_____	_____	_____	_____	_____
Customer Service	_____	_____	_____	_____	_____
Train Cleanliness	_____	_____	_____	_____	_____
Station Cleanliness	_____	_____	_____	_____	_____
Bus Connections	_____	_____	_____	_____	_____
Station Parking	_____	_____	_____	_____	_____
Price/value	_____	_____	_____	_____	_____
Ticket machines	_____	_____	_____	_____	_____

13. What is your major transit need?_____
_____

14. What can Tri-Rail do to improve your transit trip? _____
_____

15. How did you first hear about Tri-Rail? (Circle one)

Television Newspaper Co-worker Friend/relative Radio Website

16. What County do you live in: Miami Dade Broward Palm Beach Other _____

17. Your zip code? _____

18. What is your age? UNDER 18 18-24 25-34 35-44 45-54 55-64 65+

19. What is the last year of school you completed?

Some High School High school Grad. Some College College Grad Post Grad

20. IF CURRENTLY EMPLOYED, which best describes your primary occupation? (Circle one)

Professional Management Other _____
Sales Office support

21. What is your household's annual income? (Circle one)

Under $25,000 $25-35,000 $36-50,000 $51-75,000 $76-100,000 $101,000+

22. Are you: ANGLO BLACK HISPANIC ASIAN other _____

23. Are you: MALE FEMALE

THANK YOU FOR RIDING TRI-RAIL!

Table 3-2
Origin-Destination Trip Table

From/ To	MIA	HM	MT	OL	GG	HW	SS	FLA	FL	CC	PB	DFB	BR	DRB	BB	LW	WPB	MP	Total
MIA			1		3	5	2	6	10		5	5	3	2	3	8	8	5	66
Hialeah Market			1		1	1	1	1		2	1						2	1	11
Metrorail Transfer	3	1		1	2	10	12	15	13	2	6	2	4	6	3	1	4	3	88
Opa-Locka	1		1					1			1	1	1		4	2		1	13
Golden Glades	7	3	12			7	1	8	2	5	3	1	11	10	2	1	9	1	83
Hollywood	8	1	24	2			1		1	5		3	1		6	1	9	2	64
Sheridan			7	1	1					1		2	4		1	1	4	1	23
Ft. Lauderdale Airport	9	1	12	1	1				2	2	2		2			1	3	1	37
Ft. Lauderdale	6	3	22	1		2		1		2	5	10	16	13	4	8	5	6	104
Cypress Creek	7	3	19		4	1							7	3	4	2	3	6	59
Pompano Beach	4		12		2	2	2	2	2	1			5	4			12		48
Deerfield Beach	7		12	2	4	7	1	7	1	2			1	2	4		3	4	57
Boca Raton	2	1	13		2	2		4	4		1			2			6		37
Delray Beach	3	1	4			1			1	1							2		13
Boynton Beach	1		12	2		2	1	2	7	3		2				2	3	3	40
Lake Worth	5	3	5		2	2		4	1	2	1		1	2	2		1	10	41
W. Palm Beach	9	1	15	2	4		1	7	7	1	1	1	2	4	3	1		4	63
Mangonia Park	5		2	1		3		1	5	1	1	2	2		1	1			25
Total	77	18	174	13	26	45	22	59	56	30	27	29	60	48	37	29	74	48	872

3.1.2 Summary of Results

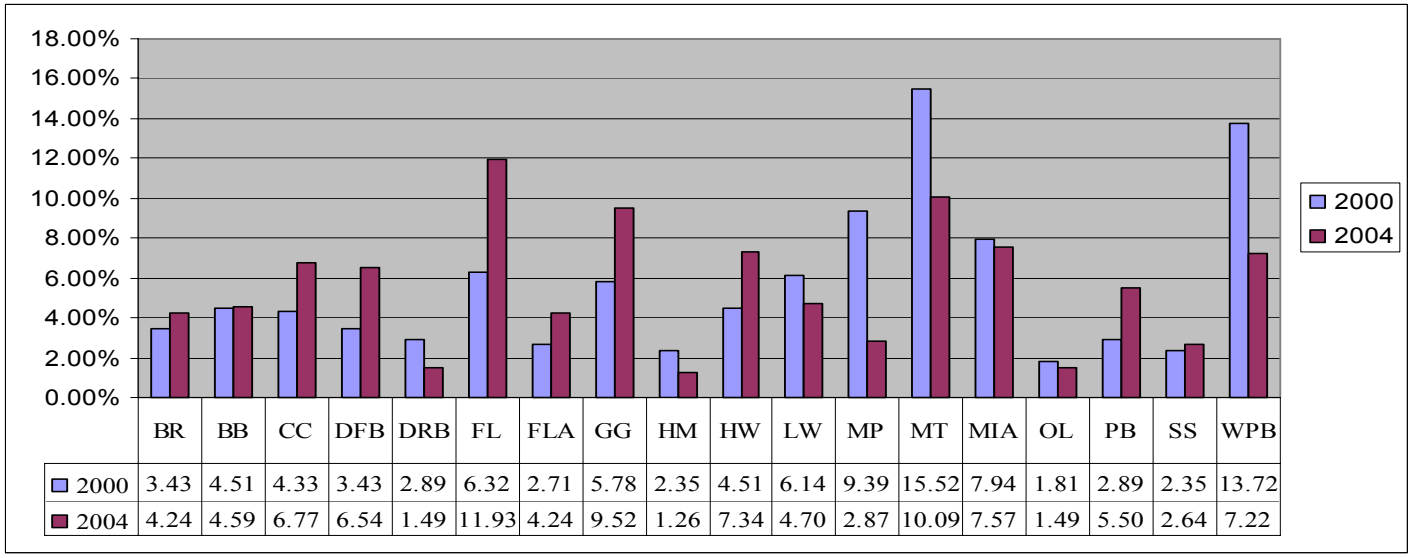
The following sections present a summary of the responses to each question asked on the survey. Each section presents the responses in the year 2000 and then again in the year 2004. The following table shows the abbreviations that are used in all the charts and tables throughout this report

Table 3-3
Station Abbreviations

Station Name	Boca Raton	Boyton Beach	Cypress Creek	Deerfield Beach	Delray Beach	Fort Lauderdale	Fort Lauderdale Airport	Golden Glades	Hialeah Market
Station abbreviation	BR	BB	CC	DFB	DRB	FL	FLA	GG	HM
Station Name	Hollywood	Lake Worth	Mangonia Park	Metrorail Transfer	Miami Airport	Opa-Locka	Pompano Beach	Sheridan	West Palm Beach
Station abbreviation	HW	LW	MP	MT	MIA	OL	PB	SS	WPB

Survey Question:

At what station did you board the train?



	BR	BB	CC	DFB	DRB	FL	FLA	GG	HM	HW	LW	MP	MT	MIA	OL	PB	SS	WPB
2000	3.43	4.51	4.33	3.43	2.89	6.32	2.71	5.78	2.35	4.51	6.14	9.39	15.52	7.94	1.81	2.89	2.35	13.72
2004	4.24	4.59	6.77	6.54	1.49	11.93	4.24	9.52	1.26	7.34	4.70	2.87	10.09	7.57	1.49	5.50	2.64	7.22

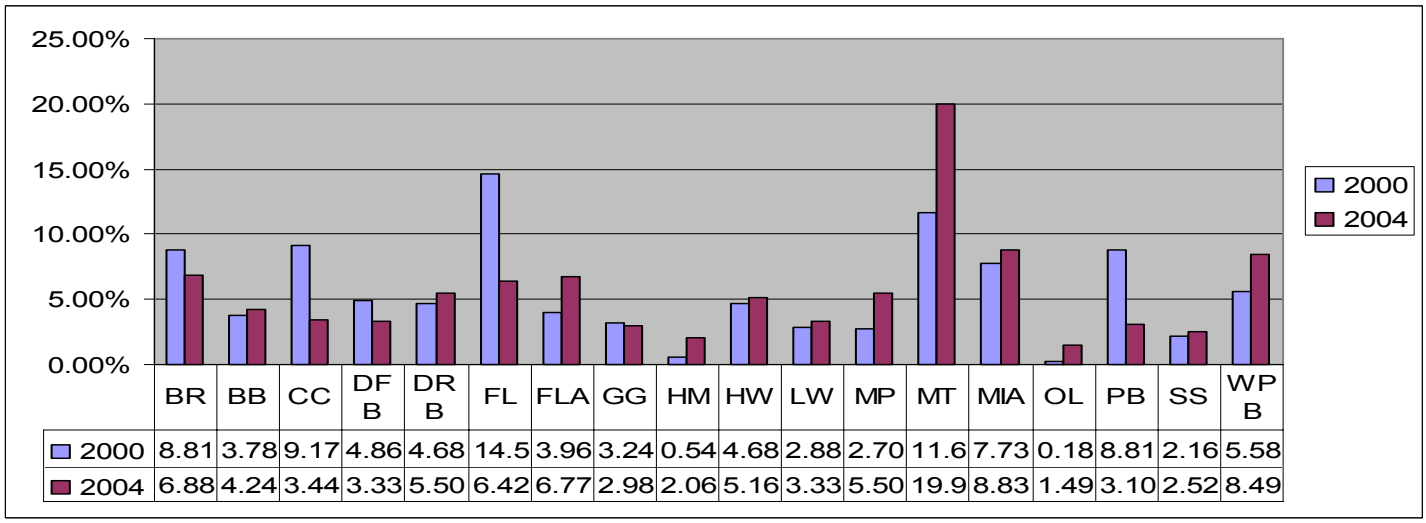
Results:

Year 2000 - This survey showed very strong disparities between the stations. The Metrorail Transfer station had the most boardings with West Palm Beach rating closely behind. Metrorail Transfer had 15.5% of the total boardings while West Palm Beach had 13.7% of the boardings. Mangonia Park rated third with 9.4% of the total boarding rate. Mangonia Park and West Palm Beach are the northern capture points for the Tri-Rail system.

Year 2004 - The results of this survey showed a substantial flattening of boardings between the stations. The Fort Lauderdale station had the most boardings with 11.9%. The Metrorail and Golden Glades stations followed about evenly behind with an average of 9.7%.

Survey Question:

At what station will (or did) you get off the train?



	BR	BB	CC	DFB	DRB	FL	FLA	GG	HM	HW	LW	MP	MT	MIA	OL	PB	SS	WPB
2000	8.81	3.78	9.17	4.86	4.68	14.5	3.96	3.24	0.54	4.68	2.88	2.70	11.6	7.73	0.18	8.81	2.16	5.58
2004	6.88	4.24	3.44	3.33	5.50	6.42	6.77	2.98	2.06	5.16	3.33	5.50	19.9	8.83	1.49	3.10	2.52	8.49

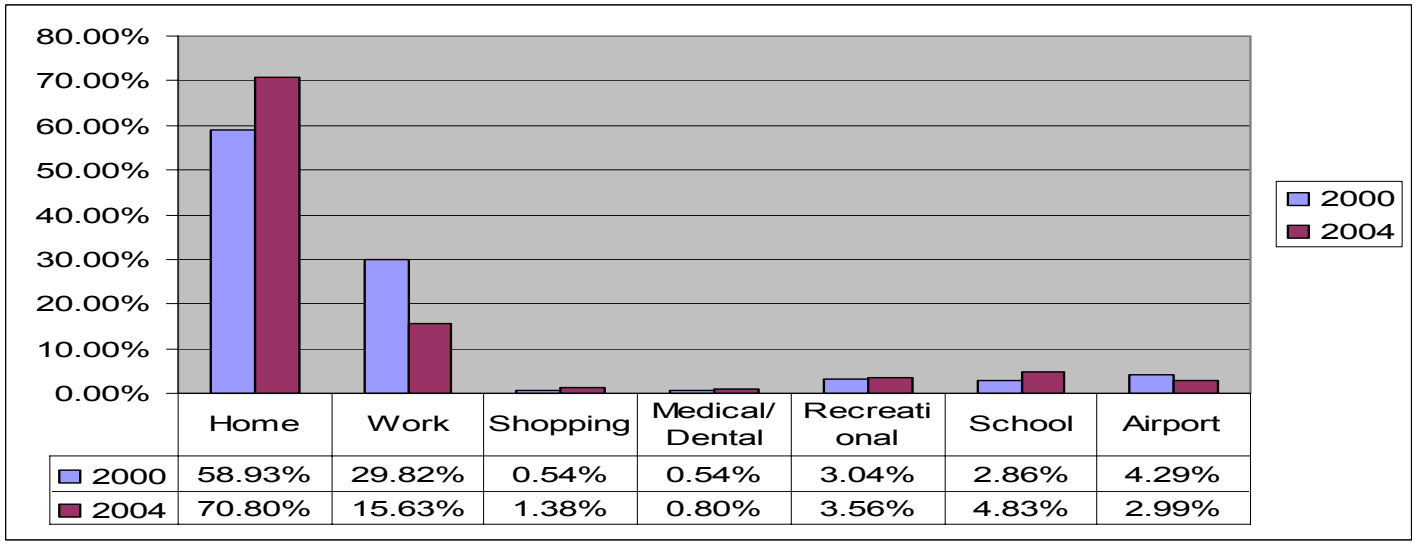
Results:

Year 2000 - The response to this survey question, like the previous question, showed very strong peaking at several stations. The Fort Lauderdale station had the most patrons departing from this station at 14.6%. The Metrorail Transfer had 11.7%, followed by Pompano Beach with 8.8%.

Year 2004 - The results of this response showed a very heavy dominance of people exiting the train at the Metrorail Transfer station, otherwise there was a marked leveling of station activity. The Metrorail Transfer station had 19.95% of the debarking passengers. The Miami Airport and West Palm Beach stations had almost an even number of debarking passengers with an average of 8.7%.

Survey Question:

Where were you when you started this trip?



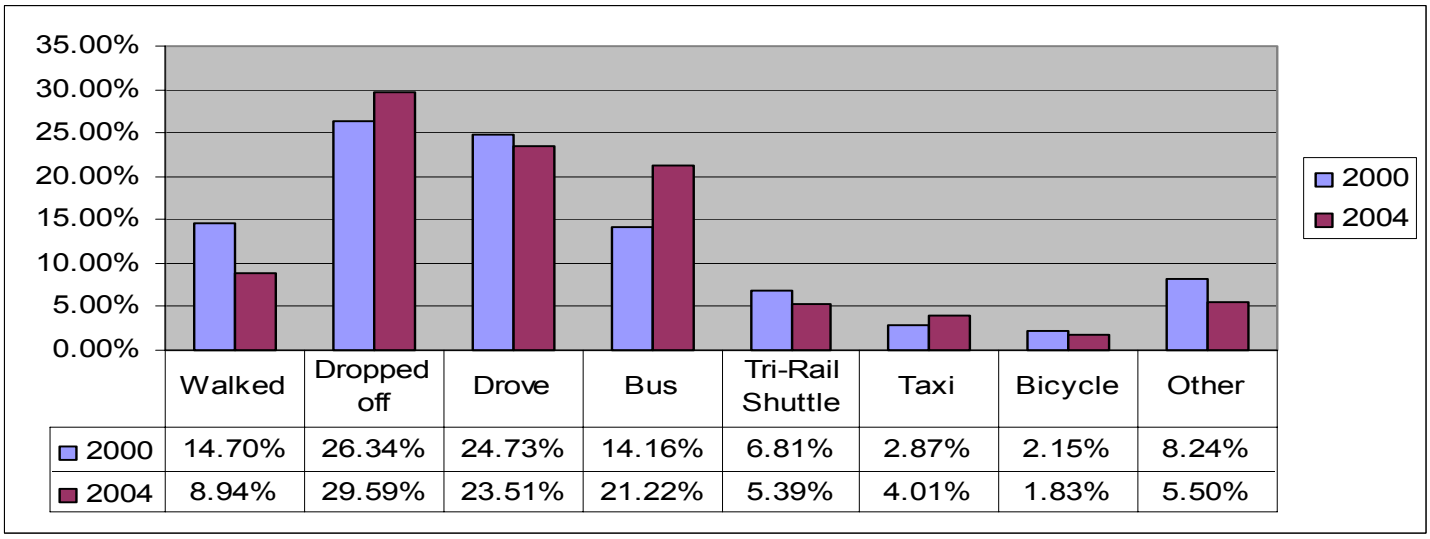
	Home	Work	Shopping	Medical/ Dental	Recreational	School	Airport
2000	58.93%	29.82%	0.54%	0.54%	3.04%	2.86%	4.29%
2004	70.80%	15.63%	1.38%	0.80%	3.56%	4.83%	2.99%

Results:

Years 2000 & 2004 - The survey results for both years had minor fluctuations with more people responding to the survey on the home to work end of the survey in 2004.

Survey Question:

How did you arrive at the station where you boarded the train?



	Walked	Dropped off	Drove	Bus	Tri-Rail Shuttle	Taxi	Bicycle	Other
2000	14.70%	26.34%	24.73%	14.16%	6.81%	2.87%	2.15%	8.24%
2004	8.94%	29.59%	23.51%	21.22%	5.39%	4.01%	1.83%	5.50%

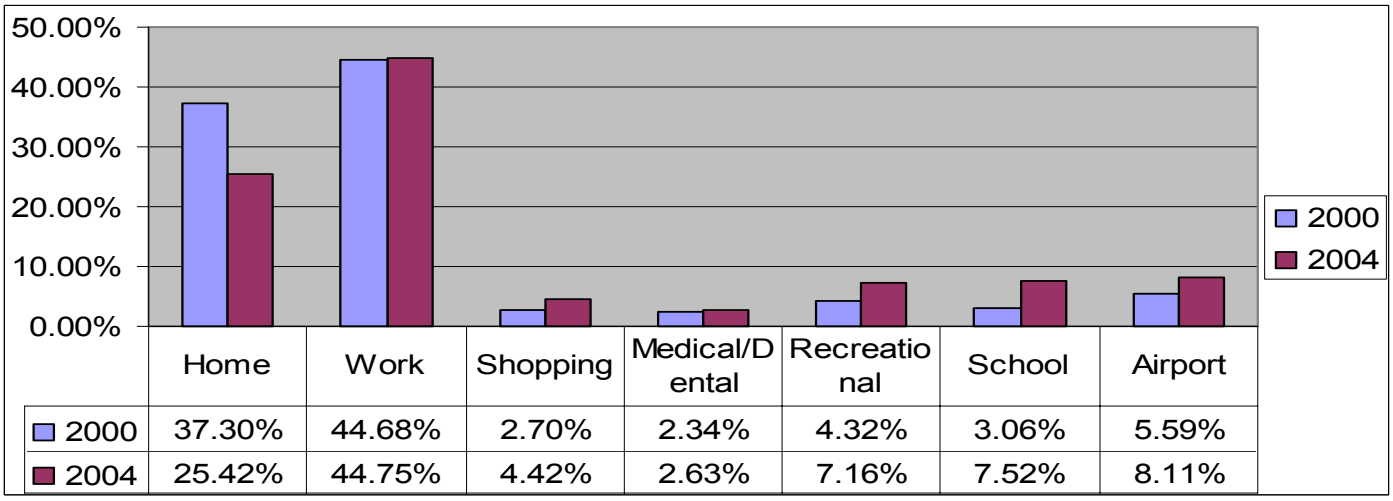
Results:

Year 2000 - The majority of patrons (26.3%) were dropped off (kiss-and-ride) at their stations. Ranked second at 24.7% were patrons that drove their own vehicles (park-and-ride).

Year 2004 - The two leading modes of transportation that remained constant for both years: kiss-and-ride and park-and-ride. The percentage of people taking the bus had a 7% increase from 2000 (from 14% to 21%). The results of individual surveys showed that 42% and 41% of all the patrons at the Cypress Creek and the West Palm Beach stations were dropped off, respectively. The Golden Glades and the Fort Lauderdale stations had the highest percentage of patrons arriving by bus - 40% and 36%, respectively. 23% of the passengers arriving at the MIA station and 11% of the Fort Lauderdale station patrons came by Tri-Rail shuttle.

Survey Question:

What is the final destination for this trip?



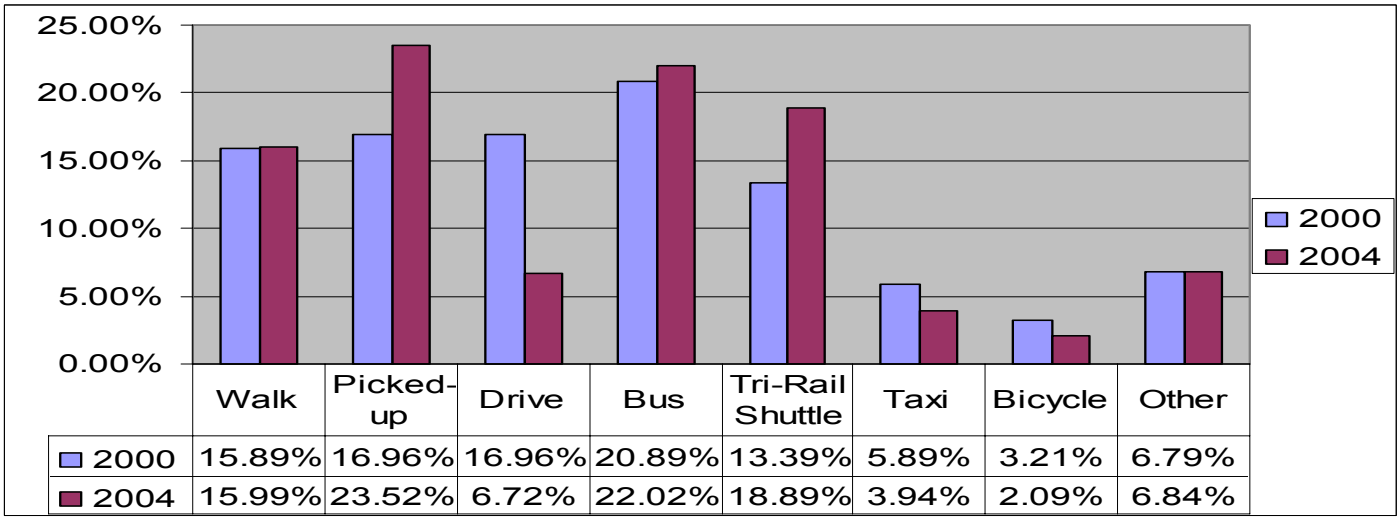
	Home	Work	Shopping	Medical/Dental	Recreational	School	Airport
2000	37.30%	44.68%	2.70%	2.34%	4.32%	3.06%	5.59%
2004	25.42%	44.75%	4.42%	2.63%	7.16%	7.52%	8.11%

Results:

Years 2000 & 2004 - The final destination that rated the highest for both years was "Work," which rated about 45% for both years. The other highest destination was their places of residency at 25%. The survey indicates a modest trend toward using Tri-Rail for non-home-to-work trips, such as recreation or shopping.

Survey Question:

How will you get from Tri-Rail to the place you are going?



	Walk	Picked-up	Drive	Bus	Tri-Rail Shuttle	Taxi	Bicycle	Other
2000	15.89%	16.96%	16.96%	20.89%	13.39%	5.89%	3.21%	6.79%
2004	15.99%	23.52%	6.72%	22.02%	18.89%	3.94%	2.09%	6.84%

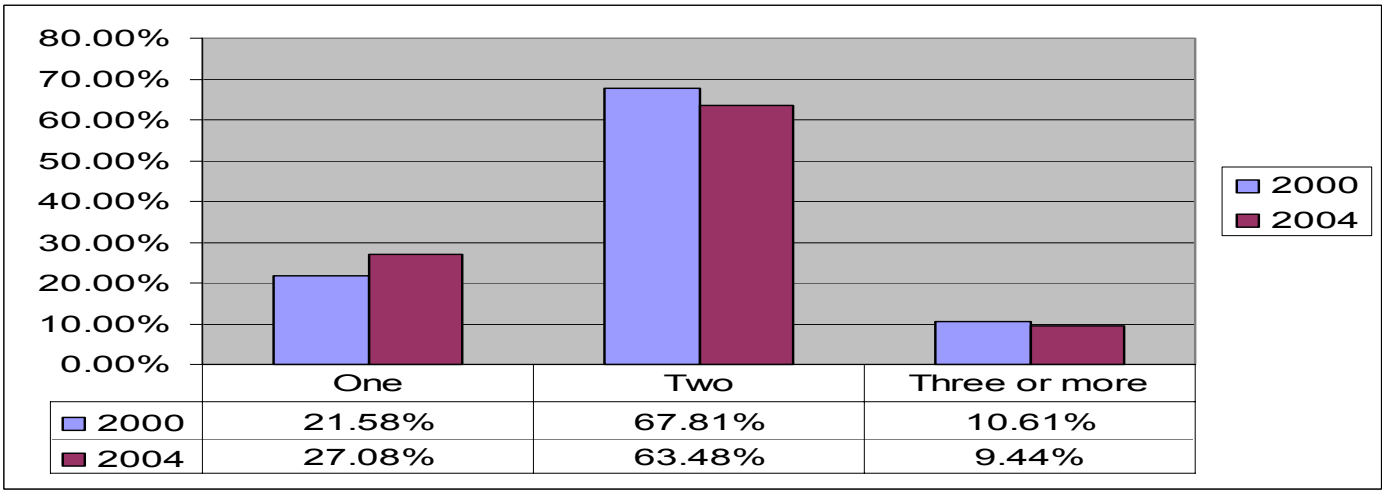
Results:

Year 2000 - The survey showed that there was no dominant mode for departing the Tri-Rail stations with five of the modes (walk, picked up, drove, bus and shuttle) all carrying at least 10% of the patrons.

Year 2004 - There was a shift in the mode of transportation people took to get from the train to their destinations. Three modes showed major increases (picked-up, bus and shuttle) for how patrons got to their destinations. The number of people driving dropped by 10%. Cypress Creek represented the most typical station with 22% of the patrons using each of the modes - walking, being picked up, taking the shuttle and riding the bus. Similarly Fort Lauderdale had 28% of the patrons using the modes - being picked up, taking the shuttle and riding the bus. Golden Glades had the most one sided mode choice with 44% of the passengers riding the bus. Boca Raton had the strongest transit usage with 40% by bus and 27% by shuttle. Deerfield Beach, FLA, and MIA had the heaviest shuttle uses at 39%, 38% and 34%, respectively. Pompano Beach had the highest walk percentage at 39%.

Survey Question:

How many times today will you ride Tri-Rail?



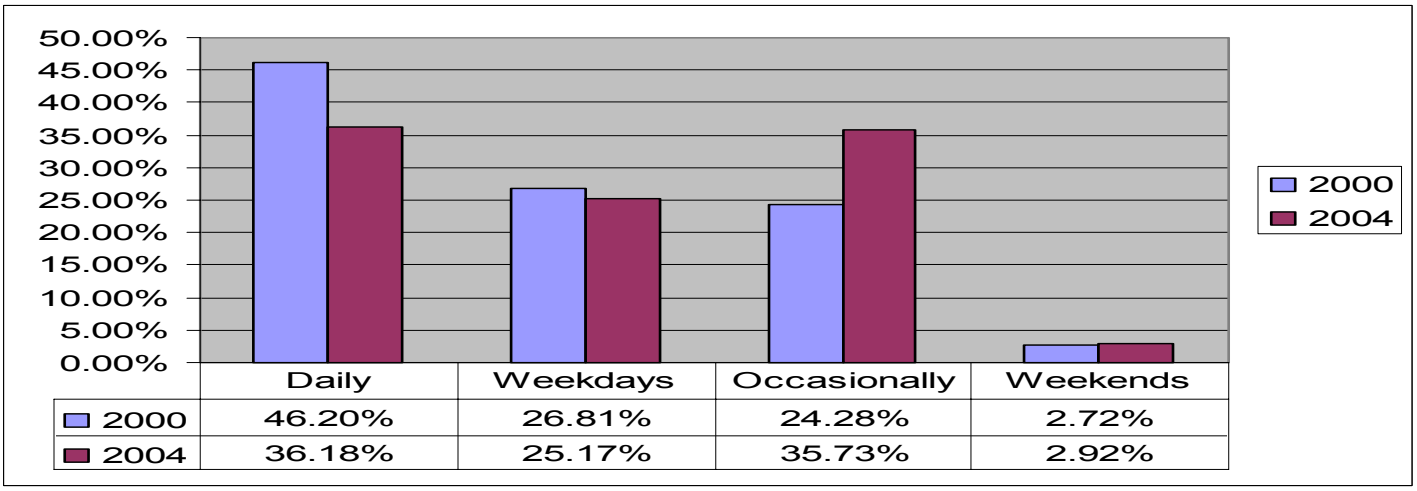
	One	Two	Three or more
2000	21.58%	67.81%	10.61%
2004	27.08%	63.48%	9.44%

Results:

Years 2000 & 2004 - There were minor fluctuations between the numbers of times per day that people ride the train. Most people ride Tri-Rail twice a day.

Survey Question:

How frequently do you ride Tri-Rail?



	Daily	Weekdays	Occasionally	Weekends
2000	46.20%	26.81%	24.28%	2.72%
2004	36.18%	25.17%	35.73%	2.92%

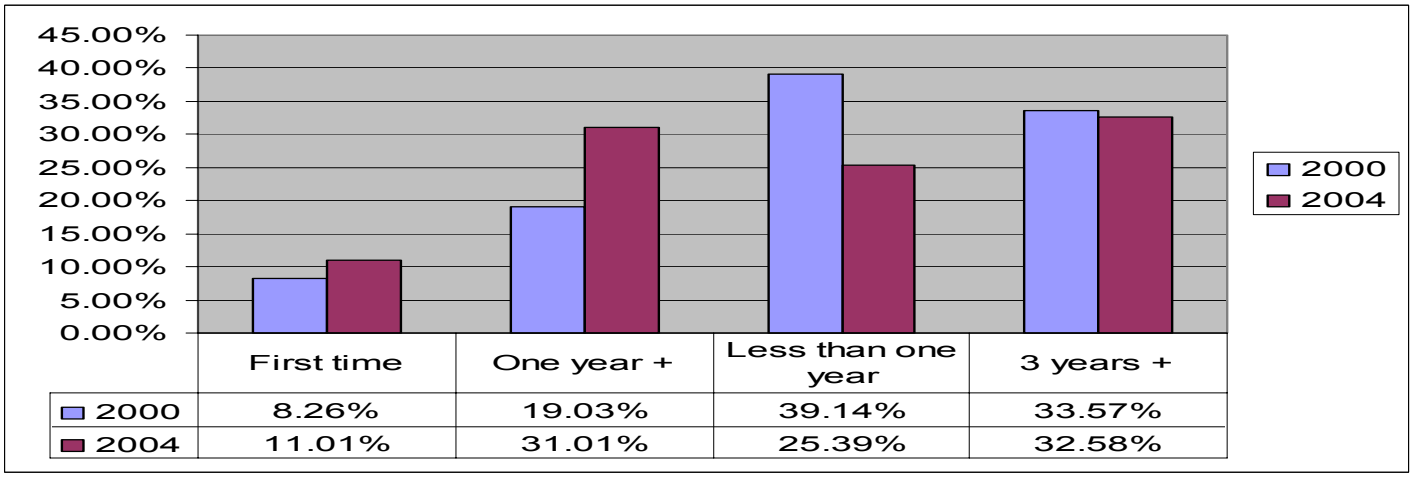
Results:

Year 2000 - The number of patrons who used the train on a daily basis was high. People had used Tri-Rail seven days a week to conduct daily activities. The number of people using the train on weekdays or occasionally remained about the same.

Year 2004 - The number of people using the train daily and occasionally was almost even. There was a shift in the number of people who use Tri-Rail daily and those who use Tri-Rail occasionally. Daily Tri-Rail users dropped by 10% whereas occasional Tri-Rail users increased by 10%. This might due to people driving their own private vehicles due to the double tracking construction at the stations.

Survey Question:

How long have you been riding Tri-Rail?



	First time	One year +	Less than one year	3 years +
2000	8.26%	19.03%	39.14%	33.57%
2004	11.01%	31.01%	25.39%	32.58%

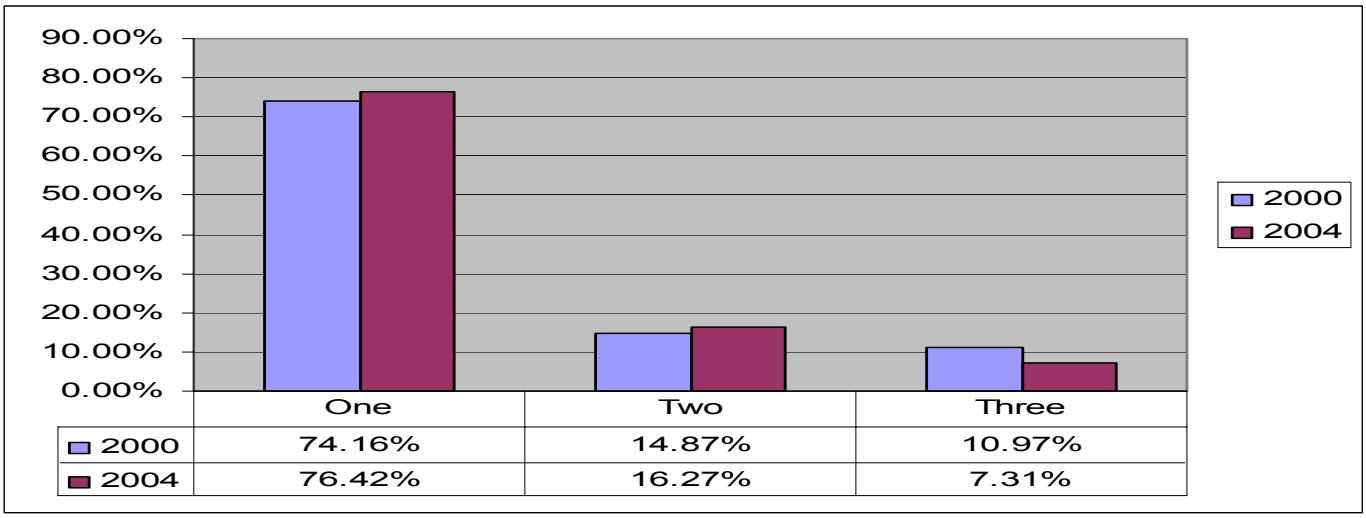
Results:

Year 2000 - Many patrons were new Tri-Rail customers who had only taken the train for under one year. The number of people who have been taking the train for over three years had an above average rating of about 33.5%.

Year 2004 - Many patrons have been taking the train for over three years. The next largest response was from people who have been taking the train for over a year. Tri-Rail has been consistent at keeping their users over a one to four year period.

Survey Question:

How many people are you traveling with (counting yourself)?



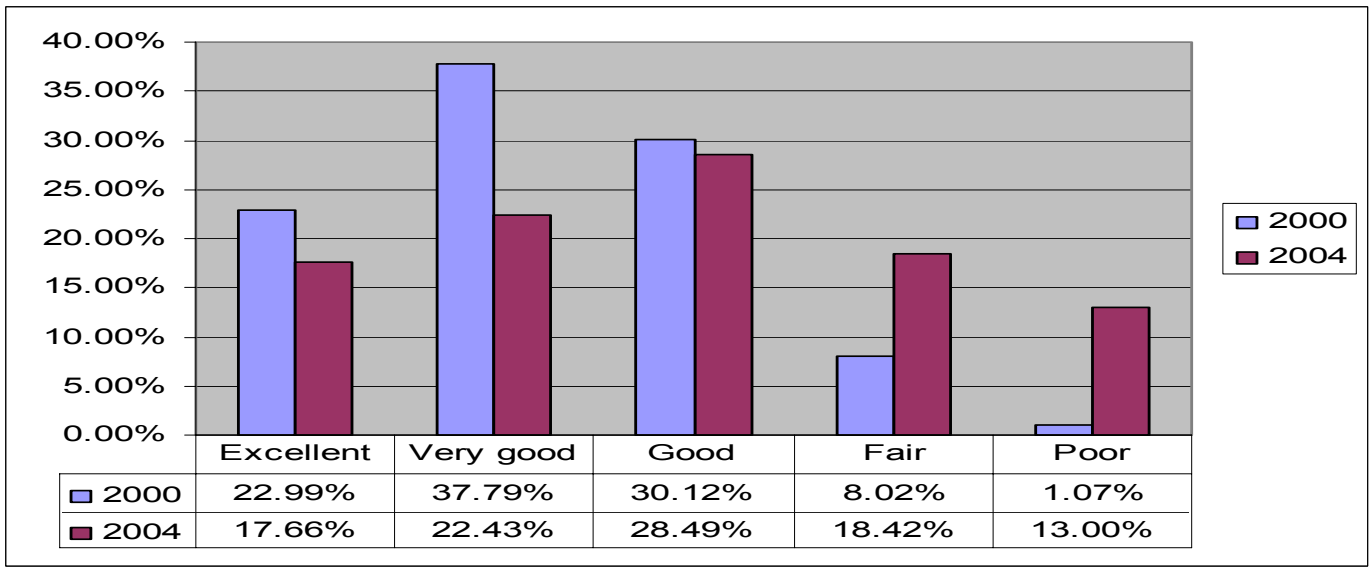
	One	Two	Three
2000	74.16%	14.87%	10.97%
2004	76.42%	16.27%	7.31%

Results:

Years 2000 & 2004 - *The majority of Tri-Rail users travel by themselves.*

Survey Question:

How do you rate your overall satisfaction with Tri-Rail?



	Excellent	Very good	Good	Fair	Poor
2000	22.99%	37.79%	30.12%	8.02%	1.07%
2004	17.66%	22.43%	28.49%	18.42%	13.00%

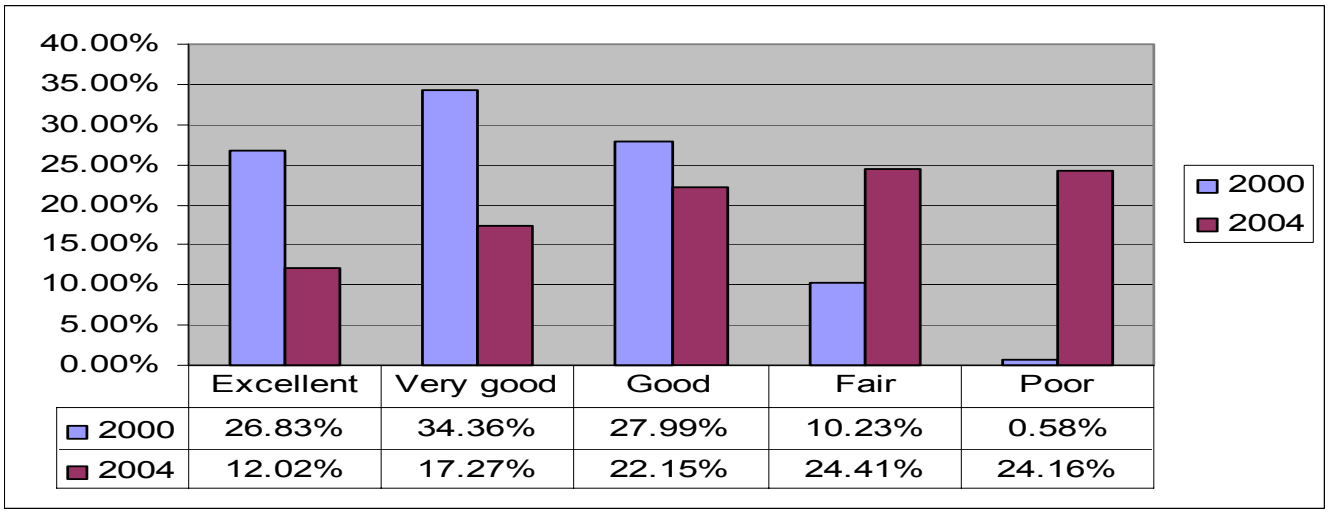
Results:

Year 2000 - *Many patrons rated Tri-Rail very good or good.*

Year 2004 - *The satisfaction rate went down from 2000. Most people rated Tri-Rail good with a rating of 28.5%. This is probably due to the delays caused by double tracking construction*

Survey Question:

On-time performance rating



	Excellent	Very good	Good	Fair	Poor
2000	26.83%	34.36%	27.99%	10.23%	0.58%
2004	12.02%	17.27%	22.15%	24.41%	24.16%

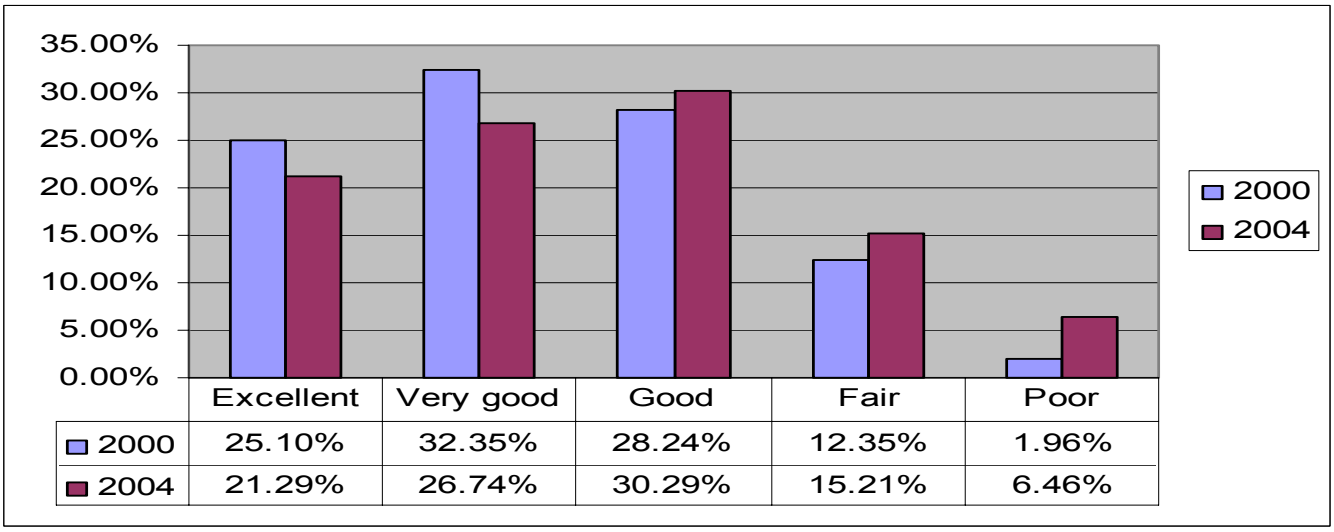
Results:

Year 2000 - Many patrons rated the train very good or good for on-time performance.

Year 2004 - This year there was a substantial decline in customer satisfaction with Tri-Rail's on-time performance. Many people rated the train fair or poor. The surveys were taken shortly after a period in which patron's experienced major delays with the double tracking construction.

Survey question:

Customer service rating



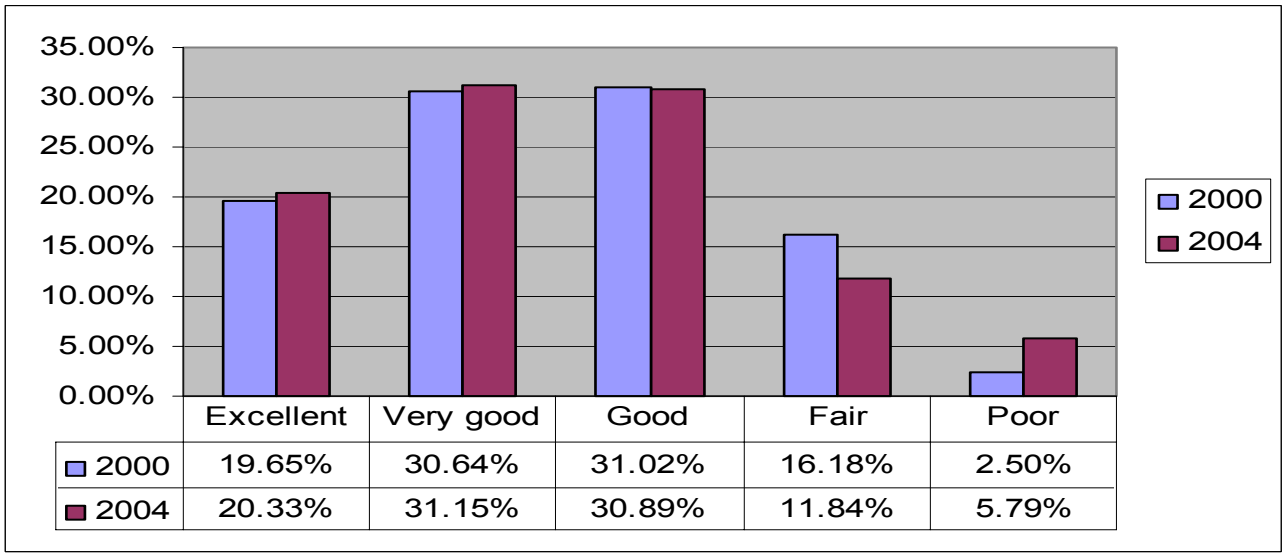
	Excellent	Very good	Good	Fair	Poor
2000	25.10%	32.35%	28.24%	12.35%	1.96%
2004	21.29%	26.74%	30.29%	15.21%	6.46%

Results:

Years 2000 & 2004 - Many patrons rated Tri-Rail with a good or very good customer service rating. There was a minor negative shift in this category as the spill over effect of the on-time performance issue.

Survey Question:

Train cleanliness rating



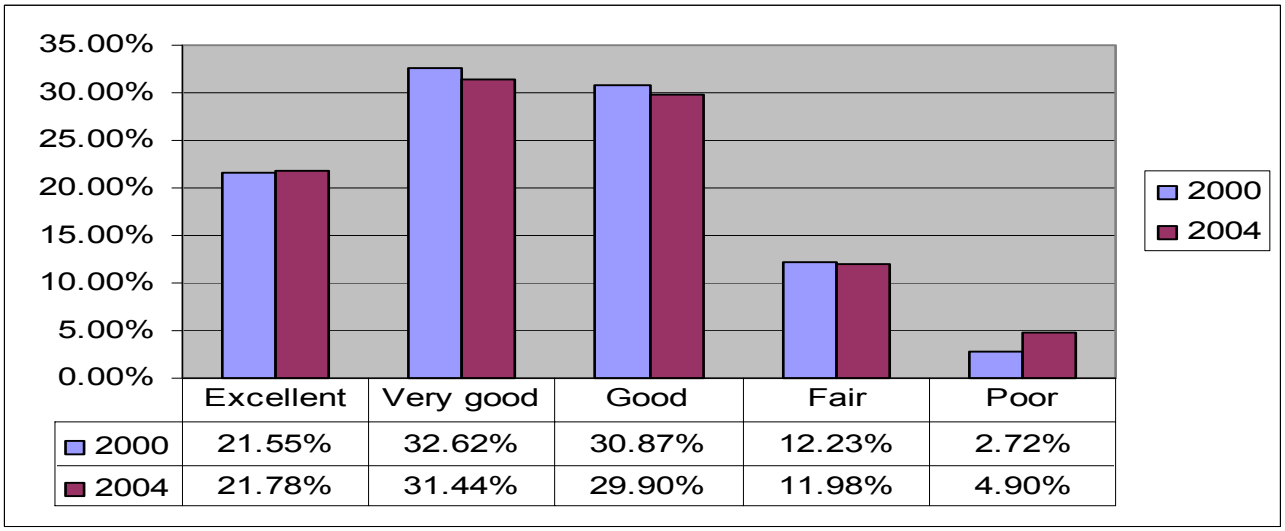
	Excellent	Very good	Good	Fair	Poor
2000	19.65%	30.64%	31.02%	16.18%	2.50%
2004	20.33%	31.15%	30.89%	11.84%	5.79%

Results:

Years 2000 & 2004 - Both years remained constant rating very good or good with train cleanliness. The very minor negative shift from fair to poor is probably due to client dissatisfaction related to on-time performance.

Survey Question:

Station cleanliness



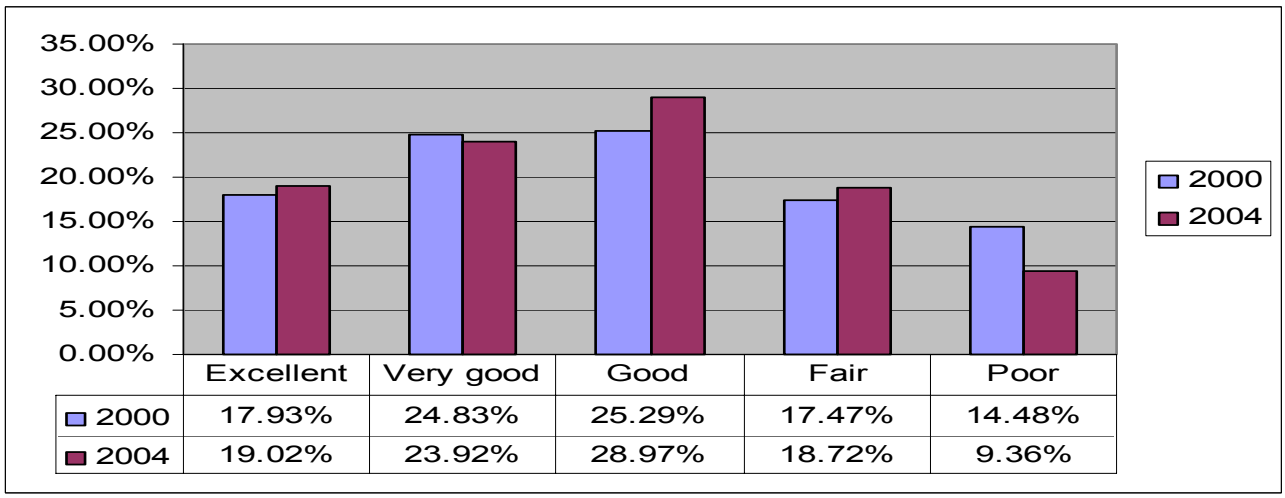
	Excellent	Very good	Good	Fair	Poor
2000	21.55%	32.62%	30.87%	12.23%	2.72%
2004	21.78%	31.44%	29.90%	11.98%	4.90%

Results:

Years 2000 & 2004 - Both years were rated very good or good for station cleanliness.

Survey Question:

Bus connections rating



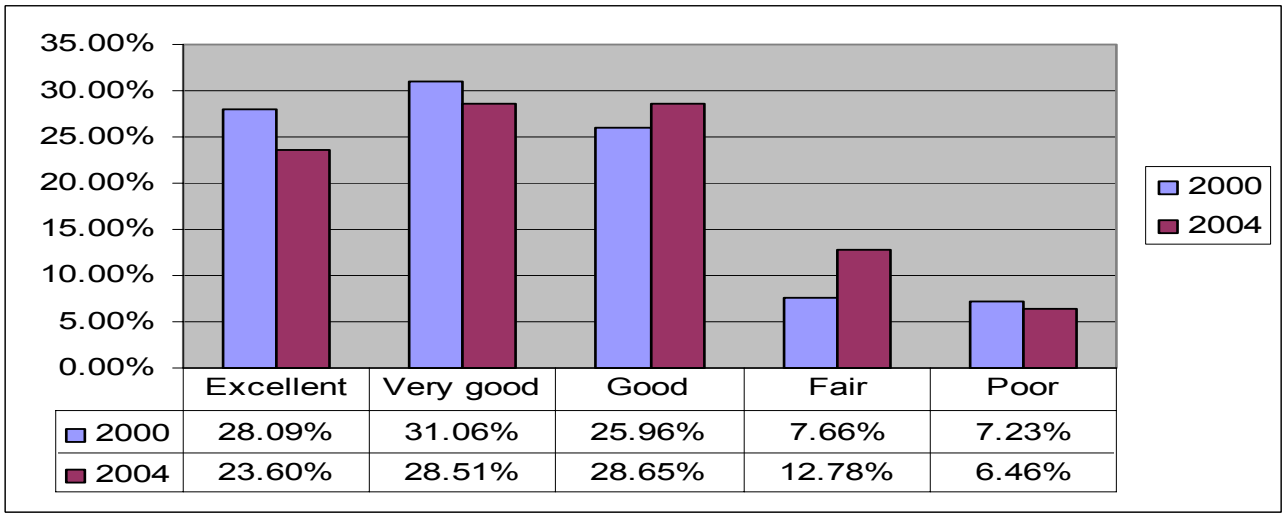
	Excellent	Very good	Good	Fair	Poor
2000	17.93%	24.83%	25.29%	17.47%	14.48%
2004	19.02%	23.92%	28.97%	18.72%	9.36%

Results:

Years 2000 & 2004 - Both years rated very good or good with being consistent with bus connections. There appears to be a minor improvement in the ranking of bus service.

Survey Question:

Station parking rating

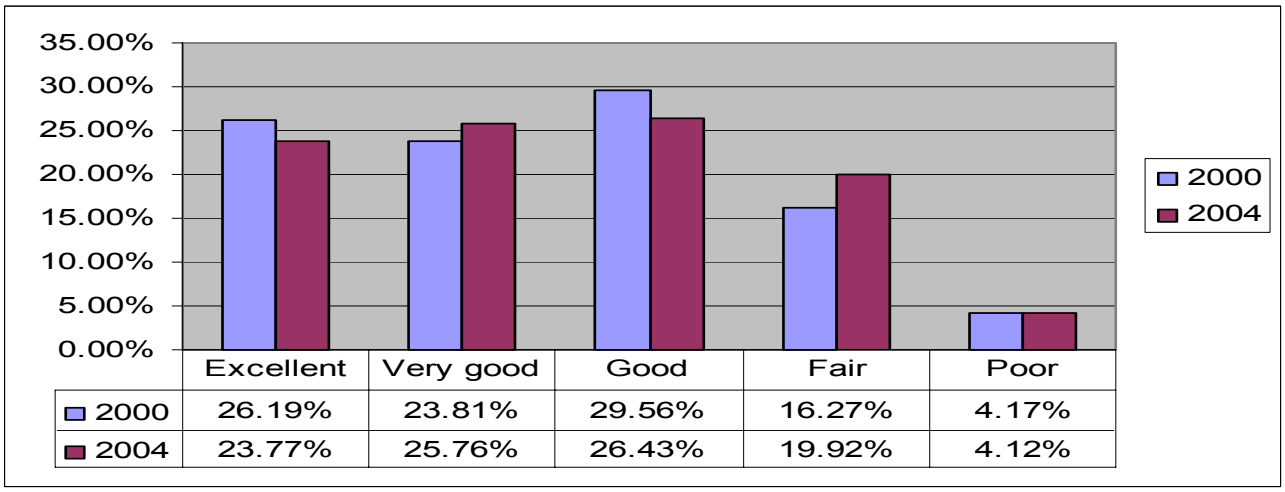


	Excellent	Very good	Good	Fair	Poor
2000	28.09%	31.06%	25.96%	7.66%	7.23%
2004	23.60%	28.51%	28.65%	12.78%	6.46%

Results:

Years 2000 & 2004 - There were some minor fluctuations but patrons continued to rate parking at the stations very good or good. The only negative comments came from stations that had lost parking due to construction, such as at Lake Worth.

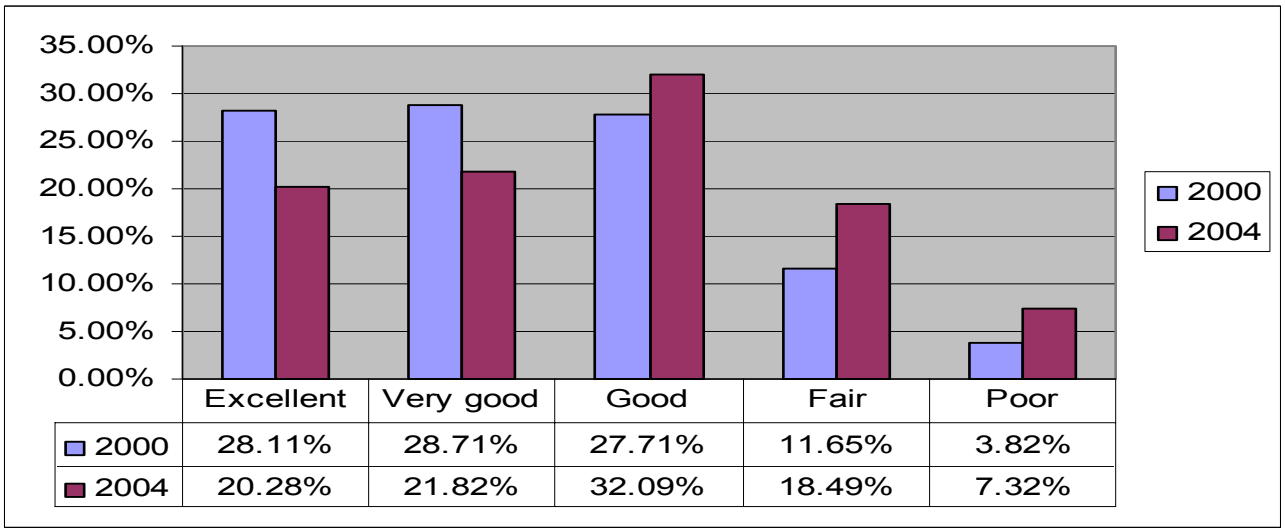
Survey Question:
Price value rating



	Excellent	Very good	Good	Fair	Poor
2000	26.19%	23.81%	29.56%	16.27%	4.17%
2004	23.77%	25.76%	26.43%	19.92%	4.12%

Results:
Years 2000 & 2004 - *Most patrons rated that the price/value was good to excellent. This would mean that they are satisfied with the price of their tickets as to what service they get from Tri-Rail.*

Survey Question:
Ticket machines rating



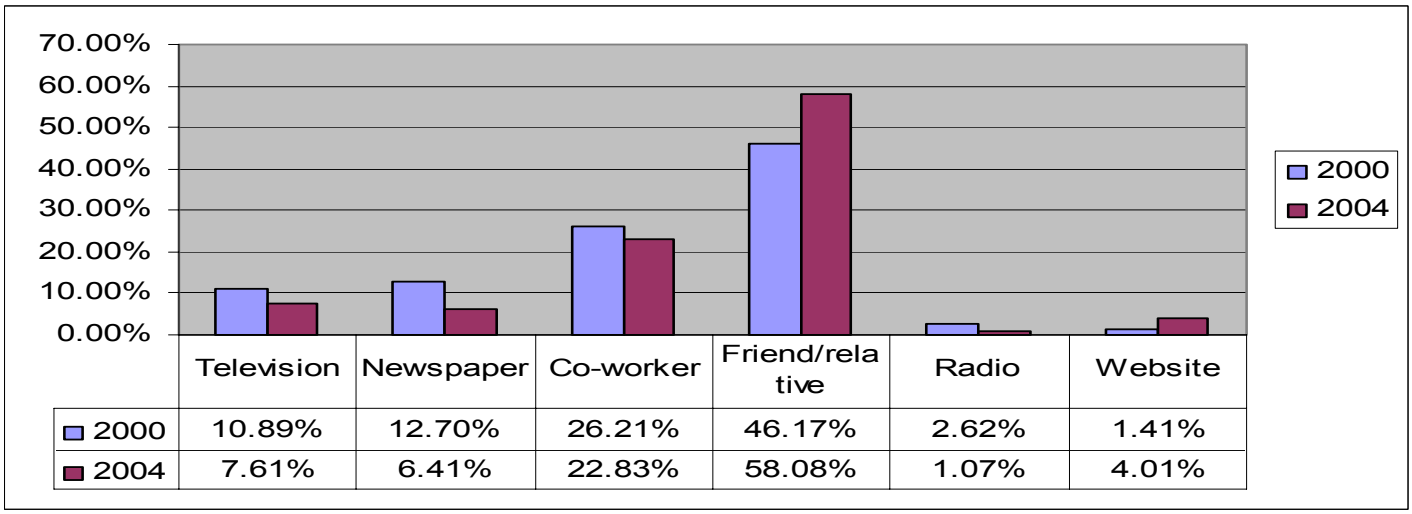
	Excellent	Very good	Good	Fair	Poor
2000	28.11%	28.71%	27.71%	11.65%	3.82%
2004	20.28%	21.82%	32.09%	18.49%	7.32%

Results:
Year 2000 - *Many people rated the ticket machines good through excellent.*

Year 2004 - *Most people rated the machines good with a 32.1% rating. There were indications of problems with the reliability of the machines, with use of credit cards, and clarity for first time or occasional users.*

Survey Question:

How did you first hear about Tri-Rail?



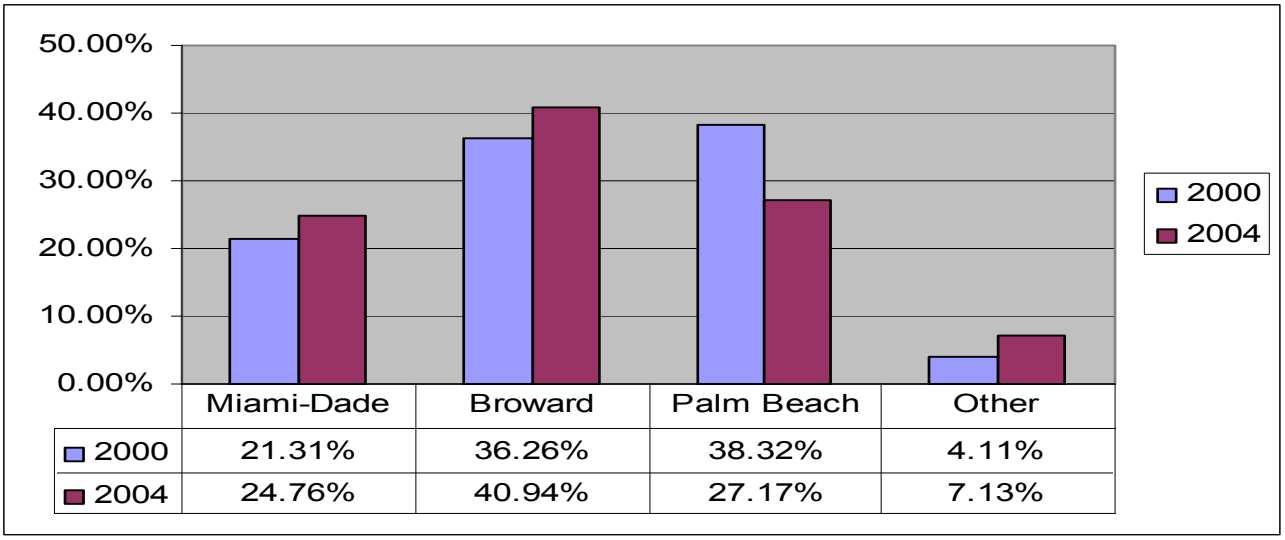
	Television	Newspaper	Co-worker	Friend/relative	Radio	Website
2000	10.89%	12.70%	26.21%	46.17%	2.62%	1.41%
2004	7.61%	6.41%	22.83%	58.08%	1.07%	4.01%

Results:

Years 2000 & 2004 - Most patrons first heard of Tri-Rail through friends and relatives.

Survey Question:

What county do you live in?



	Miami-Dade	Broward	Palm Beach	Other
2000	21.31%	36.26%	38.32%	4.11%
2004	24.76%	40.94%	27.17%	7.13%

Results:

Year 2000 - Most of the Tri-Rail users lived either in Palm Beach or Broward Counties. Palm Beach had a rating of 38.3% and Broward had a rating of 36.3%.

Year 2004 - Since 2000, many users still live in Palm Beach or Broward Counties. Broward County had the highest rating at 40.6% and then Palm Beach County had a rating of 27.2%.

The survey requested that the residential zip code be provided. The results of the zip code distribution are shown on Figure 2-1.

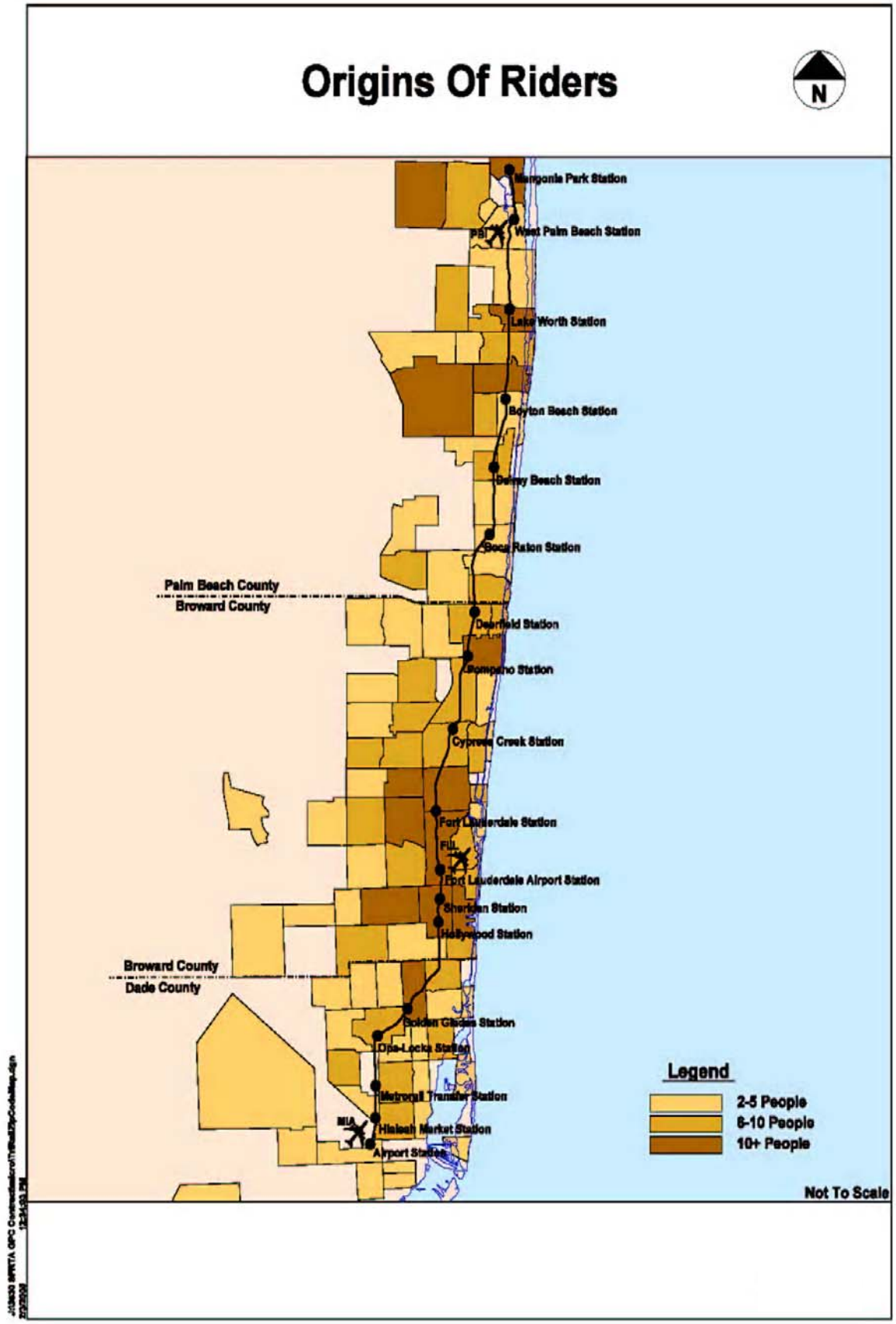
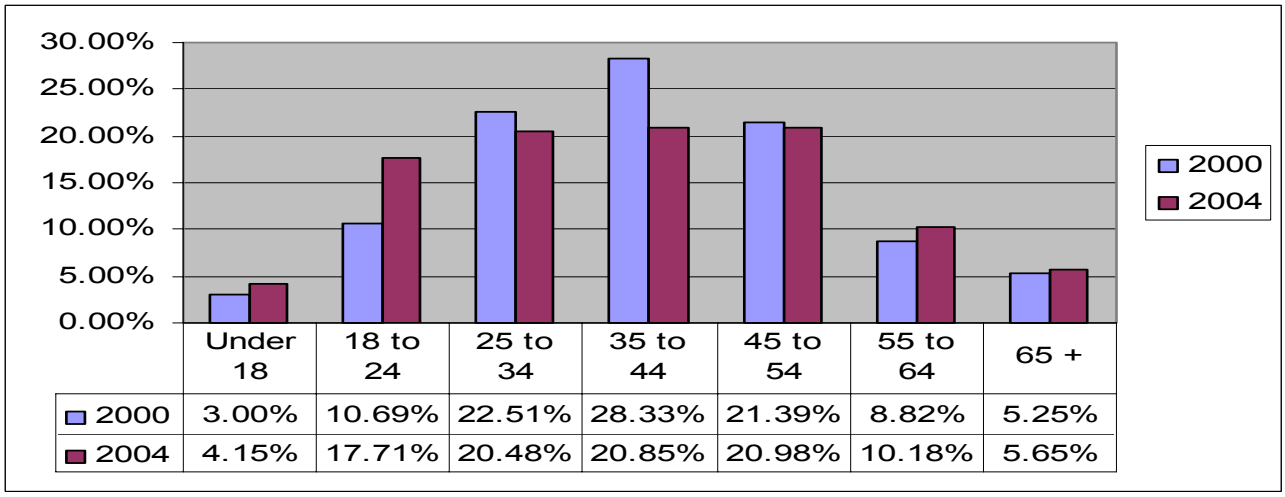

Origins Of Riders
N
Mangonia Park Station
PBI
West Palm Beach Station
Lake Worth Station
Boynton Beach Station
Delray Beach Station
Boca Raton Station
Palm Beach County
Broward County
Deerfield Station
Pompano Station
Cypress Creek Station
Fort Lauderdale Station
FLL
Fort Lauderdale Airport Station
Sheridan Station
Hollywood Station
Broward County
Dade County
Golden Glades Station
Dpe-Locka Station
Metrorail Transfer Station
MIA
Hialeah Market Station
Airport Station
Legend
2-5 People
6-10 People
10+ People
Not To Scale

Figure 2-1

Survey Question:

What is your age?



	Under 18	18 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 +
2000	3.00%	10.69%	22.51%	28.33%	21.39%	8.82%	5.25%
2004	4.15%	17.71%	20.48%	20.85%	20.98%	10.18%	5.65%

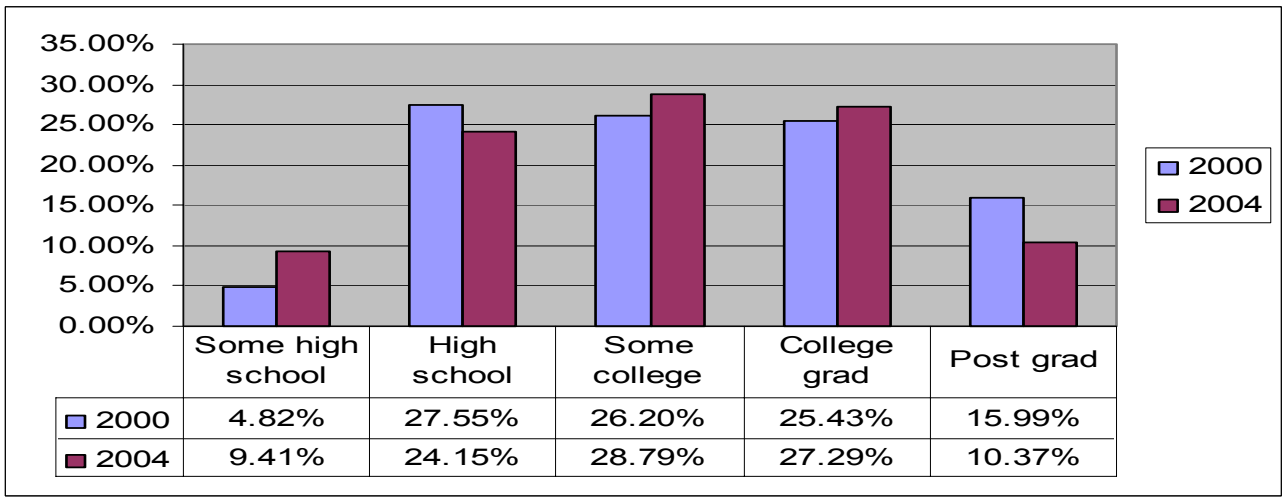
Results:

Year 2000 - Most Tri-Rail users are between the ages of 25 to 54. Most people in this age bracket usually are in the job market. The largest group was people between the ages of 35 to 44, which are usually the highest income group.

Year 2004 - This survey showed a shift toward younger riders in the 18 to 24 age category. This group tends to be at a much lower income from the 35 to 44 age group, which showed the largest decline in percentage between the two surveys.

Survey Question:

What is the last year of school you completed?



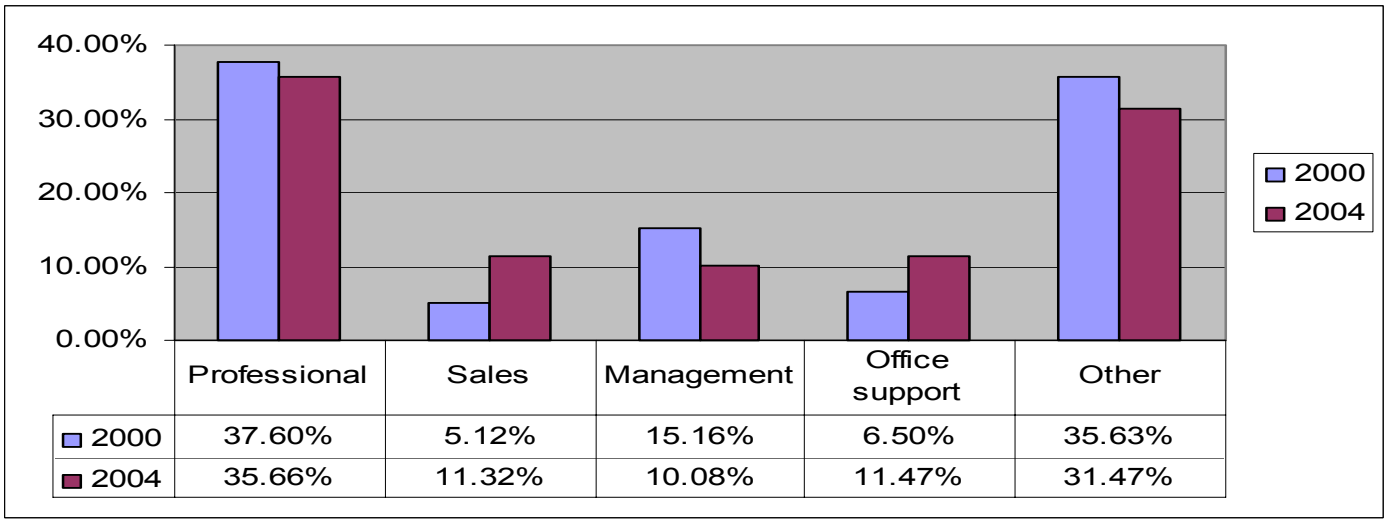
	Some high school	High school	Some college	College grad	Post grad
2000	4.82%	27.55%	26.20%	25.43%	15.99%
2004	9.41%	24.15%	28.79%	27.29%	10.37%

Results:

Years 2000 & 2004 - Most of the patrons that ride Tri-Rail have either a high school or college education. Post graduates use Tri-Rail less.

Survey Question:

If currently employed, which best describes your primary occupation?



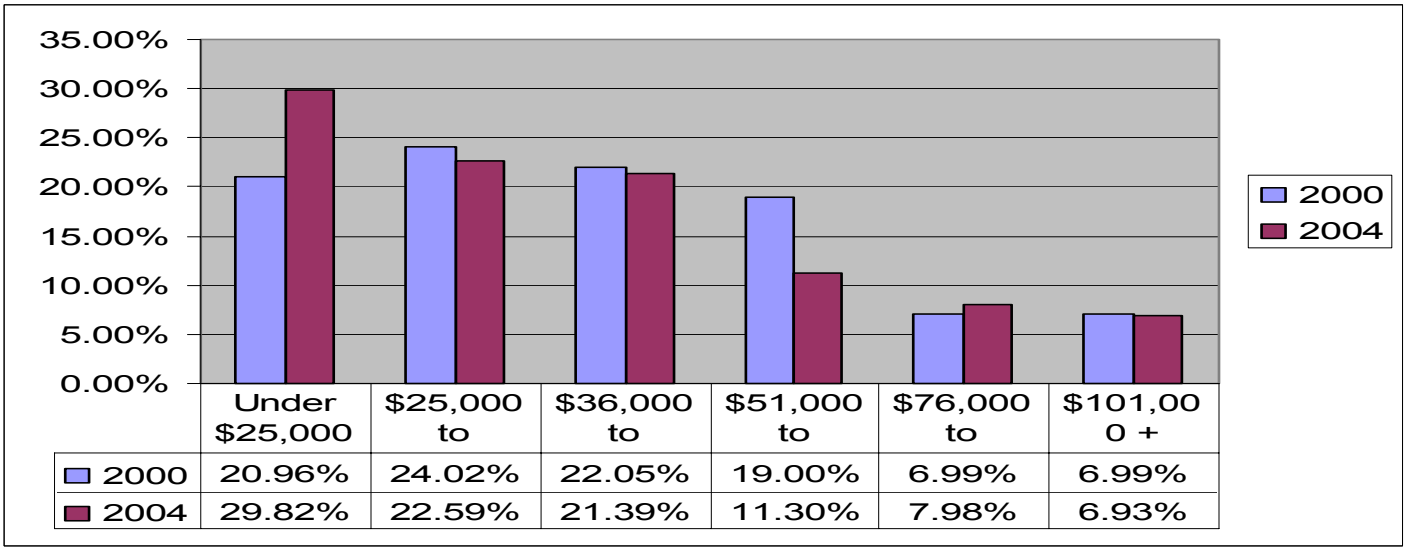
	Professional	Sales	Management	Office support	Other
2000	37.60%	5.12%	15.16%	6.50%	35.63%
2004	35.66%	11.32%	10.08%	11.47%	31.47%

Results:

Years 2000 & 2004 - *Most people who use Tri-Rail either had professional jobs or worked in another field, identifying themselves as laborers.*

Survey Question:

What is your household's annual income?

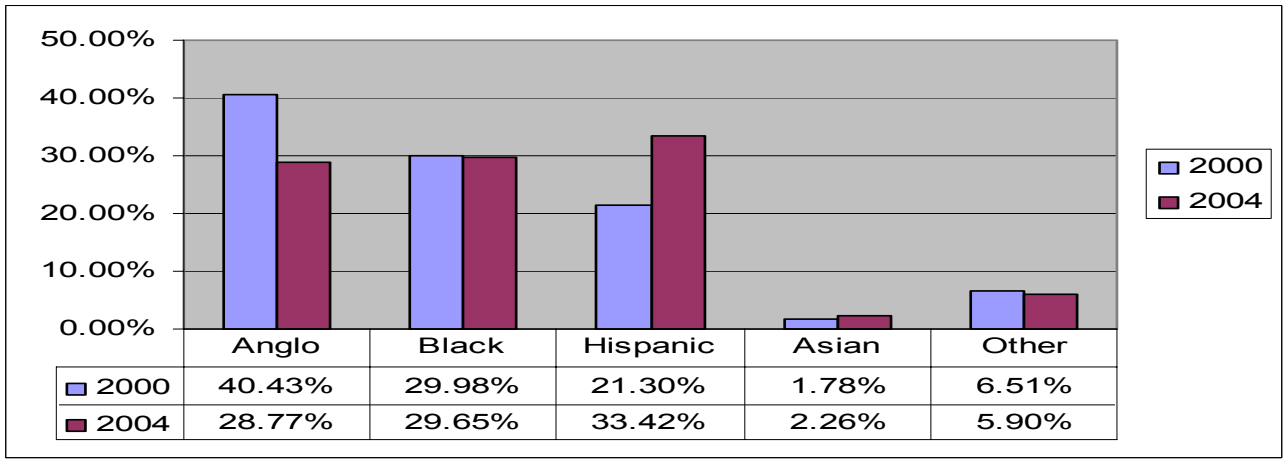


	Under $25,000	$25,000 to	$36,000 to	$51,000 to	$76,000 to	$101,000 +
2000	20.96%	24.02%	22.05%	19.00%	6.99%	6.99%
2004	29.82%	22.59%	21.39%	11.30%	7.98%	6.93%

Results:

Years 2000 & 2004 - *In 2000 Tri-Rail reflected large numbers of choice riders with 19% of the riders earning $51,000 to $75,000 annually. In 2004 that number had dropped by 8% and the largest group of Tri-Rail patrons had become those individuals earning less than $25,000, who would normally be considered captive riders.*

Survey Question:
Are you?

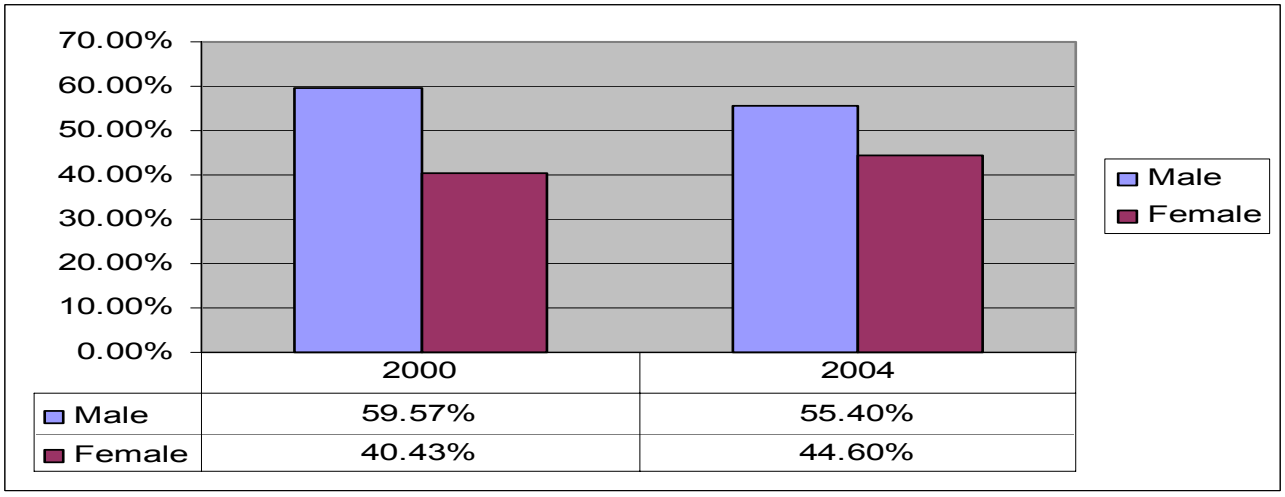


	Anglo	Black	Hispanic	Asian	Other
2000	40.43%	29.98%	21.30%	1.78%	6.51%
2004	28.77%	29.65%	33.42%	2.26%	5.90%

Results:
Year 2000 - *More Caucasian customers chose to ride Tri-Rail at 40.4%. Black and Hispanic customers ranked second and third, with 29.9% (Black) and 21.3% (Hispanic).*

Year 2004 - *This survey results indicated that more Hispanic customers chose to ride Tri-Rail at 33.4%. Black and Caucasian customers rated second and third at 29.6% and 28.7%, respectively.*

Survey Question:
Are you?



	2000	2004
Male	59.57%	55.40%
Female	40.43%	44.60%

Results:
Years 2000 & 2004 - *Males ride Tri-Rail more than females with minor fluctuations between the two years.*

3.1.3 Survey Recommendations

The survey gave Tri-Rail patrons an opportunity to respond to any issue regarding Tri-Rail and supportive bus services. Table 3-4 provides the responses that were received.

Table 3-4
Survey Comments

Response	#
Train Service	
Better on time Performance	259
More frequent trains	94
Run trains every half hour	35
Run trains later at night	33
Faster running times	11
Run trains at midday	9
Lower the fare	7
More Routes	6
Increase weekend service	5
Go further north	5
Continue to expand service	4
Add more stations	4
Add more cars during rush hour	3
Add more trains during rush hour	3
Finish double tracking ASAP	3
Expand service north and south	3
Expand service along I-595	3
Reduce delays while on the train	2
Express trains from Boca to Sheridan Stations	1
More trains between cities in Florida	1
More tracks to reduce delay	1
More cars on 603 and 624	1
Allow mid trip transfers	1
Extend service to Orlando	1
Provide discounts for Construction workers	1
Free transfers from Airports	1
Student Discounts	1
Passenger Convenience	
Need more station attendants/ambassadors	5
More space for luggage	4
Ticket machines never accept VISA	4
Inadequate parking at Lake Worth Station	4
Maps at stations showing local bus routes	3
More space for bikes	2
Sell tickets on train	2
Validate tickets on train	2
Ticket machines are difficult to use	2
Repair ticket machines	2

Table 3-4 (Continued)
Survey Comments

Response	#
Passenger Convenience	
Problems validating multi-day ticket	1
Locate taxi's nearer the station entrance/exit	1
Audible announcements at stations	1
Maps showing area surrounding stations	1
Wire trains for internet	1
Faster ticket machines	1
Messages in Spanish on train	1
More convenient parking at Cypress Creek Station	1
More parking at Hollywood Station	1
Passenger Comfort	
Snack machine on trains	8
Cleaner toilets on trains	7
Need restrooms at stations	6
More comfortable seats	5
Food service on trains	4
Control student noise	2
Better student chaperones	2
More security at stations	2
Reserve one car for no students	1
Better assistance for the disabled	1
Clean trains between trips	1
Coffee on trains	1
Bus Service	
Better bus service to stations	27
Improved time transfers	7
More shuttle buses	5
Local buses to meet Tri-Rail Schedules	5
Buses wait for late trains	4
Improve PalmTran connections	3
Provide a bus connection to Blue Lagoon	2
Better bus connections along Hillsboro Blvd.	2
MDT Rte 36 should meet Tri-Rail Schedule	1
Run more shuttles from Hialeah Market Station	1
Better work end shuttles	1
More connections	1
There are good connections to Central Broward Terminal	1
Shuttle service to Barry University	1
Need better bus service between Coral Springs	1
Emergency Shuttles	1

3.2 Meetings with Transit Riders

During the period between February 28 and March 8, 2005, a series of community meetings were held at different locations in Miami-Dade, Broward, and Palm Beach Counties. The public was presented with the SFRTA Double Tracking Improvement Project and was asked what projects should be considered for the SFRTA 2006-2010 TDP. Meetings were held at the following locations:

Monday, February 28, 2005
Metrorail Transfer Station
Hialeah, FL
(7:00AM - 9:30AM)

Tuesday, March 1, 2005
West Palm Beach Tri-Rail Station
West Palm Beach, FL
(3:00 PM - 5:30PM)

Tuesday, March 8, 2005
BCT Central Terminal
Fort Lauderdale, FL
(7:00AM - 9:30PM)

Tuesday, March 1, 2005
Fort Lauderdale Tri-Rail Station
Fort Lauderdale, FL
(7:00AM - 9:30AM)

Monday, March 7, 2005
MDT Downtown Miami Transfer Facility
Miami, FL
(1:00PM - 4:00PM)

Friday, March 11, 2005
Palm Tran
Quadrille North/South Transfer Facility
West Palm Beach, FL
(3:00PM - 5:30PM)

Tuesday, April 19, 2005
SFRTA Conference Room
Pompano Beach, FL
(7:00PM-9:00PM)
Note: Advertised in papers of General Circulation in Miami-Dade, Broward, and Palm Beach Counties.

The meeting schedule was part of the agenda package for the SFRTA Board meeting of February 25, 2005 and was announced at the SFRTA Board meeting. The meeting schedule was also posted on the SFRTA web site. The purpose of the first round of meetings was to intercept transit users and find out what the regional transportation agency could do to improve regional transit. This non-traditional outreach effort was extremely successful. Comments were received from over 300 transit users. It was important that so many people were able to find out about planned Tri-Rail services, and to provide input as to what the perceived regional transit needs are.

The following is a summary of the comments received at each of the public outreach locations.

Metrorail Transfer Station February 28, 2005
All stations need additional security during the day and night
More express buses between Fort Lauderdale/Hollywood and downtown Miami
Need bathrooms at stations
Patrons need accurate and up to date information either over the phone or on the internet
Need area maps with bus routes and stops at all stations
Each Tri-Rail line should insert an extra car to help alleviate the trains being over crowded during rush hour
More parking at the Metrorail transfer station
Additional trains, bus connections, and shuttles during evenings and nights for people who leave work or school later in the day, additional trains during the weekends
Better timing/coordination between CSX and Tri-Rail which will cut down on wait times and delays
More MDT bus and shuttle connections to South Beach from Tri-Rail stations
Tri-Rail extension to Homestead
Additional personnel at each station for patron assistance
Expand bus routes at all Tri-Rail station
Better timing/coordination of bus and train times between MDT, BCT, and Palm Tran with Tri-Rail that will decrease delays and wait times
Provide better bus shelters and benches at all Tri-Rail stations
Enforce the rules on the trains and at train stations, wireless internet access on trains
Have a standardized transfer system that is accepted by all county transit agencies
An increase in the frequency of MDT, BCT, and Palm Tran buses to and from all Tri-Rail stations
Meters or parking passes in parking lots to prevent unauthorized usage
Better beverage machines
Fort Lauderdale Station March 1, 2005
Vehicles designed to accommodate the needs of handicapped people
Additional trains, bus connections, and shuttles during the day
More MDT bus and shuttle connections to South Beach from Tri-Rail stations
Additional trains and bus connections on the weekends, extend the Palm Tran all day transfer policy to BCT and MDT
Tri-Rail, Metrorail trains, and all bus connections need to hold for each other; this would cut down on patrons missing their transit connections. More express buses and shuttles between major cities, entertainment, and employment centers
Palm Tram, BCT, and MDT need to increase their interagency information sharing, coordination, and cooperation, patrons need accurate and up to date information either over the phone or on the internet

Fort Lauderdale Station March 1, 2005
All Palm Tran, BCT, and MDT buses should accept the Tri-Rail Transfer tickets. SFRTA should start running express service from Fort Lauderdale and Hollywood to downtown Miami, using the HOV lanes
All BCT, Palm Tran, and MDT bus routes will both need to run a lot more frequently to meet the new 20 minute headways
To help students meet their class schedules there is a need for improved schedules, later trains, and bus connections during the evening and night
Jupiter and Kendall Tri-Rail extensions
Loud, clear, and frequent audio announcements at station platforms
More express bus and shuttle routes between major transit hubs in Broward County such as the Western terminal
Automatic credit card update of monthly ticket like Sunpass
Enforce the rules on the trains and at train stations
Additional regular and bilingual personnel at all stations addressing patron concerns
Lower weekend fares Train conductors should hold train for patrons buying their tickets when a train arrives. Buying and validating tickets on the train Bilingual and user-friendly ticket machines
Discounts for frequent riders
All stations need additional security during the day and night
Need bathrooms at and vending machines at all stations
Each Tri-Rail line should insert an extra car to help alleviate the trains being over crowded during rush hour
Bus stops should be next to the stations and easily accessible
MDT Buses 22,12,1 and 84 need to be faster, frequent, and runs more on weekends
Early morning trains Frequent shuttle service between the Fort Lauderdale Airport and Fort Lauderdale Station
West Palm Beach Station March 1, 2005
Palm Tran needs improved timing/coordination with Tri-Rail trains
All Tri-Rail stations need to provide schedules and maps directions for patrons; Frequent announcements on trains from conductors Conductors should be consistent with checking tickets All stations need additional security during the day and night
More improved timing/coordination between Palm Tran and BCT buses Palmetto Freeway Extension
Additional afternoon and night trains Communication and coordination between the freight trains and Tri-Rail to avoid constant delays Palm Tram, BCT, and MDT need to increase their interagency information sharing, coordination, and cooperation No separation of patrons on train from conductors
More frequency of trains during the morning and afternoon hours Palm Tran needs to increase its service and connections during these hours

West Palm Beach Station March 1, 2005
Provide bathroom facilities at stations
All stations will need additional security during the day and night
More express buses between major cities, and employment centers
Patrons need accurate and up to date information either over the phone or on the internet
Expand weekend service Additional personnel at stations to assist patrons
Add additional cars to the AM and PM rush schedules to alleviate overcrowding
Have bus/shuttle stops close to station entrances
WPB Airport Shuttle needs to operate frequently
Have a method of signaling security while on the train
Downtown Miami Bus Transfer Station March 7, 2005
Frequent bus/shuttle connections from Tri-Rail stations
Bathrooms at stations
MDT needs to frequently service and maintain their buses, especially the air conditioning
Improved customer service from MDT bus drivers Increase on time performance
Frequent announcements on the trains and at train stations
Additional bus shelters need to be constructed at all MDT bus stops
Florida City Extension of Tri-Rail
Broward Central Terminal March 8, 2005
BCT lines 22, 1 and 14 needs more frequent service
Tri-Rail and BCT needs additional weekend service with more frequency especially during the evening and at night
There needs to be maps and schedules available of all mass transit lines in the Tri-County area at all Tri-Rail stations and major bus terminals
Additional daily trains
Snack service on trains
Tri-Rail should run 24/7
User-friendly and bilingual ticket vending machines
Additional personnel at all Tri-Rail stations to assist patrons
BCT needs improved timing/coordination with Tri-Rail trains so patrons won't miss their transit connections
Orlando, Port St. Lucie, and Key West Extensions
Increase train service during holidays.
Additional security at all train stations
Additional bus/ shuttle connections to major activity centers from Tri-Rail stations
Lower Tri-Rail fares
Frequent rider discount
West Palm Beach Bus Terminal March 11, 2005
Bilingual train information at bus stops/stations
Additional bus/shuttle connections from Tri-Rail stations when trains operate at 20 minute headways

West Palm Beach Bus Terminal March 11, 2005
Tri-Rail and BCT weekend service should be frequent especially during the evening and at night
User-friendly and bilingual ticket machines
Jupiter extension
Train schedule should be posted in the Miami Herald, Palm Beach Post, and local newspapers
Additional express buses/shuttles between major cities, entertainment, and employment centers
Lower Tri-Rail fares
Maps and schedules should be available of all mass transit lines in the Tri-County area at all Tri-Rail stations and major bus terminals

3.3 Outreach Program

A meeting was held at Century Village - Deerfield Beach on March 22, 2005 between 1:00 pm and 4:00 pm. 500 flyers were distributed within Century Village. The meeting was advertised on Channel 99, an informational channel within Century Village. The following represents a summary of the comments received during the meeting

Improved, extended, and frequent bus service to Mizner Park Amphitheatre and Town Center from Century Village
Extended bus service hours into Century Village
More information about train and bus schedules in the monthly Century Village paper and local daily newspapers
Additional personnel at stations to assist elderly especially at the Hollywood Station
Dedicated shuttle bus directly through Century Village to Tri Rail
BCT 92 needs to have additional frequent service/extended hours through the evening and night. More importantly, this bus line should operate directly through Century Village
Additional bus lines and routes along Hillsboro Blvd
Bus services at the Deerfield Beach Station should drop and pick up patrons directly in front of the train platform
Tri-Rail should reinstate its tours that take patrons to Bayside & City Place
Need accurate and up to date information on connecting bus routes and schedules from Century Village to get to major cities, entertainment, and employment centers
Tri-Rail tours to show tenants how to get to different places from Century Village
One recommendation is to have a "Transportation Mobile." This would be similar to the book mobile. This vehicle should have an awning and lounge chairs for added convenience to the elderly. This service should offer maps, route schedules, and trained staff. The staff will be knowledgeable about transit routes within the Tri-County area. The "Transportation Mobile" could visit once a month at each of the Senior Citizens communities in Deerfield Beach
Have information kiosk within Century Village
Bus drivers need to be more courteous and cater more towards the elderly
Need bus shelters at every bus stop in the BCT service area
Additional BCT bus routes along A1A

A meeting was held with the SFRTA ADA Committee on March 29, 2005. Following, are comments relating to the disabled.

SFRTA Americans with Disibilities and ADA Meeting March 29, 2005
Support the Jupiter Extension, but it should go to Stuart. There is a large population that needs access to the VA hospital
CSX Extension to SCRIPPS site will improve access to the VA
Tri-Rail Park n' Ride in Martin County to Tri-Rail; it was recommended that there be an intercounty project to fund this
Engineering at train platforms to get buses closer to train; taking parking spaces out and reconfiguring the station to make buses more accessible
Mitigate the parking situation at the Lake Worth Station
Palm Beach County bus feeder system needs improvement; should be more like Broward County; PalmTran needs more buses; No rolling stock; there are 140 buses in its fleet but need a total of 300 buses; needs express shuttles/buses
Palm Beach County needs to implement the Deviated Area Response Transportation system (DART). This is where buses deviate from their fixed routes to serve handicapped patrons in less accessible areas
Stations need accessible ticket machines; need to look into methods for enabling the blind/deaf to access ticket machines and trains; it was recommended that disabled patrons can use a small handheld device with radio frequency (RF) capability. The patron can point this device to activate an audio speaker that would tell patrons about signs, trains, bathrooms etc
There should be fixed points on the platforms so that a blind person can find his way around to the elevator and ticket machines. A possible solution could be to use RF or Bluetooth technology that can guide the blind around the stations
More grant money for communities for feeder buses
Express bus service from Mangonia station to Stuart. 52,000 commuters from Martin to Palm Beach county every day. Maybe the county or Tri-Rail can institute a Park n' Ride to Mangonia Park Station
Paratransit is available but you have to make reservation a day in advance and if the bus or train runs late or if you miss it, they won't wait for you
Re-engineering the entrance at the Cypress Creek Station so that you could get a bus or shuttle it there. Move the parking lots and install a traffic light so that the buses can get back out to the main road with out hassles
FDOT is working with the 3 counties to improve routes that hit the stations. There is $500,000 from the state that could be used in the counties for improvements, but that is up to the county and FDOT to decide

3.4 Coordination with County Workforce Board

Meetings were held with the staff of the following agencies:

- Workforce Alliance, Inc. for Palm Beach County
- Work Force One for Broward County
- Work Force one for Miami Dade County

A preliminary draft of the document was provided to each agency and the proposed Tri-Rail projects were discussed with each agency. The following comments were made regarding Tri-Rail services and the proposed projects:

- Run later at night so people heading 3rd shift work can use the train.
- The Board of Workforce Alliance, Inc. will coordinate with employers along the Tri-Rail route to improve opportunities.
- SFRTA will notify these Workforce Development Boards when employment opportunities arise, SFRTA needs to consider facilitations on-the-job training with salary supplements for potential workers from these three organizations.
- Mail brochures and schedules to the workforce boards for distribution so the employees will be able to help potential employees with their transportation needs.
- SFRTA should work with the Workforce Development Boards to get discounted pass for people doing job training .
- Need to improve Tri-Rails supportive east-west bus service so people can reach more education, job training, and employment sites.

3.5 Public Meeting Results

A public meeting was held on Tuesday April 19, 2005 at 6:00 pm at the Tri-Rail Board Room in Pompano Beach. The meeting was advertised on Saturday April 16, 2005 in the Miami Herald, the Sun-Sentinel and the Palm Beach Post. Meeting notices were placed at the Tri-Rail stations and e-mails announcing the meetings were sent to various groups. Approximately 25 people attended the meeting.

The TDP results were summarized and copies of the presentation were made available for the audience. Numerous questions were asked during the presentation regarding the findings. The recommended projects were presented in detail. While there were numerous questions asking for clarification of the projects - no comments were made regarding the individual projects. No additional projects were recommended.

4. PERFORMANCE EVALUATION

4.1 Introduction

This chapter presents a performance evaluation of SFRTA's commuter rail (Tri-Rail) and feeder bus operations. This evaluation includes both a five-year trend analysis of key performance indicators and a comparison of SFRTA's performance, with that of other regional and national peer systems.

This evaluation relies mainly on data from the National Transit Database (NTD) maintained by the Federal Transit Administration (FTA), as this is the best source of performance indicators collected and reported at a national level. The advantages of the NTD are that the data are usually collected in a consistent manner across agencies, which facilitates peer comparisons, and that data are available for all transit agencies operating ten or more vehicles in maximum service. The disadvantages of the NTD are that data are not available for 2-3 years after they were collected (i.e., conditions may have changed in the meantime) and that the performance indicators focus on things of interest to the FTA and not necessarily the local agency (i.e., measures of customer satisfaction such as reliability and accessibility are not included). Limitations of the NTD will be discussed where necessary in this chapter; nevertheless, the NTD remains a valuable tool for conducting performance evaluations.

Although comparing SFRTA's performance to the peer group's for any given measure can provide useful insights, it would be unwise to draw conclusions about whether its performance is "good" or "bad" based simply on its position relative to the peer group average. Conditions affecting performance results-levels of traffic congestion, downtown parking prices, types and densities of land use, wage rates, and so on-vary from region to region and generally are not under the control of the transit operator. Different agencies will have different goals and objectives: one might choose to provide the most cost-efficient service possible, while another might choose to provide service to as many persons as possible. The financial resources available to individual agencies will vary. Because of these differences, this chapter tries, whenever possible, to provide context to accompany the raw performance results.

It is particularly useful to compare performance results to SFRTA's own goals and objectives, to identify whether the trend is toward meeting the agency's goals, or whether actions may need to be taken to drive performance in the desired direction. If a goal is being met, it is appropriate to consider whether the bar can be raised, so that even better performance can be achieved.

4.2 Methodology

4.2.1 Data Sources

The primary source of data for this evaluation was the NTD. The Florida Transit Information System (FTIS) tool developed for the FDOT by Florida International University was used to extract information from the NTD both for performance measures directly reported by the NTD (e.g., annual passenger boardings) and for measures derived from the NTD (e.g., average speed, which is derived from annual revenue miles divided by annual revenue hours).

As of the time of writing, the most recent year for which NTD data were available was 2002. Therefore, the five-year trend analyses cover the period 1998-2002. It should be kept in mind that the results presented here present a snapshot of how service was being provided in 2002, and that conditions may have changed since then. For

two commuter rail measures where SFRTA provided more recent data-ridership and average fare-the Tri-Rail trend line has been extended to include 2003 and 2004 results.

SFRTA's feeder bus services are not directly operated by SFRTA and thus do not show up in the NTD under SFRTA. These services are operated by Palm Tran, Broward County Transit (BCT), and Miami-Dade Transit (MDT) within their respective counties and NTD data for those services are lumped in with those agencies' regular bus service. Consequently, the SFRTA feeder bus performance data were supplied by SFRTA and post-processed by the consulting team to derive the performance measures of interest, and the results were compared to peer agency data from the NTD. Palm Tran, BCT, and MDT are three of the bus peer agencies and their results include the feeder bus service they provide for SFRTA. None of the peer commuter rail agencies directly operates feeder service; therefore, it was not possible to directly compare SFRTA's feeder bus service with other commuter rail feeder services. Instead, the comparisons are to bus service in general, operated by agencies that serve commuter rail stations in addition to many other markets.

4.2.2 Performance Categories

The following performance categories are used in this evaluation:

- **General**-Descriptive system measures;
- **Vehicle**-Fleet measures;
- **Service**-Supply, utilization, and productivity measures;
- **Financial**-Revenue and expense measures;
- **Effectiveness and Efficiency**-Cost performance measures; and
- **Quality of Service**-Availability and passenger convenience measures.

The specific performance measures used within each category are discussed in the introduction to each category's section within this chapter. It would have been desirable to include some employee-related measures in this evaluation (e.g., number of employees, operating cost per employee, etc.). Unfortunately, the NTD requires agencies to report number of employees only for directly operated service, while almost all of the commuter rail operations included in the peer review (including Tri-Rail) are considered purchased transportation services. Therefore, no employee data were available from the NTD for commuter rail.

4.3 Commuter Rail Evaluation

4.3.1 Introduction

This section presents a commuter rail peer group and 1998-2002 trend analysis of the performance measure categories identified in Section 3.2.2. The peer group analysis compares SFRTA's 2002 Tri-Rail performance to the performance of other comparable commuter rail operators. The trend analysis provides a five-year look at changes in SFRTA performance and compares those changes to trends within the peer group as a whole. Section 3.4 presents a similar evaluation for SFRTA's feeder bus services.

4.3.2 Peer Group Selection

Tri-Rail operates a single route from the West Palm Beach area to the vicinity of the Miami International Airport, using diesel locomotives. Service began in 1989. During the time period covered by this analysis (1998-2002), the route was mostly single-tracked and shared with freight trains. Passengers traveling to downtown Miami must transfer to Metrorail. Downtown Ft. Lauderdale is accessible via a bus transfer. Downtown West Palm Beach is accessible via a bus transfer or a long walk.

There are 17 commuter rail operators in the U.S. that provide service every weekday. For this analysis, Tri-Rail's peers were selected to be those operators that provide service on a single route, using diesel locomotives, plus one small two-branch system. These peer systems are:

- **Altamont Commuter Express (ACE)**, which connects Stockton and fast-growing bedroom communities in California's Central Valley to the San Jose area. The route is generally single-tracked and includes two long rural sections with grades and curves that limit how fast trains can operate. The route is shared with freight trains. The San Jose station is located west of downtown, requiring a transfer to a shuttle. The other two South Bay stations have timed shuttle connections; one also has a light rail connection. Service began in 1998.
- **Caltrain**, which runs between San Francisco and San Jose, with peak-period trips continuing south to Gilroy. Caltrain's San Francisco station is located south of downtown, requiring a transfer to bus or light rail, or a long walk. Connections to Bay Area Rapid Transit, the Bay Area's heavy rail system, are available at the Millbrae station. The route is double-tracked and used exclusively by passenger trains between San Francisco and San Jose. Service began in 1863, with public ownership commencing in 1980.
- **Coaster**, linking communities along the San Diego County coast to downtown San Diego. Light rail connections are available at the two San Diego stations and the downtown station is located within walking distance of downtown destinations. The route is double-tracked and is shared with freight and intercity passenger trains. Service began in 1985.
- **Sounder**, which started operating in the Seattle area in 2000. During the time period covered by this analysis, the route ran between Seattle and Tacoma; service was later extended north to Everett in 2004. The Seattle station is located south of downtown, requiring a free bus transfer or a long walk. The Tacoma station is connected to downtown by a short streetcar line. The route is double-tracked and is shared with freight and intercity passenger trains.
- **Trinity Railway Express (TRE)**, which is jointly operated by the Fort Worth Transportation Authority and Dallas Area Rapid Transit. Dallas Union Station is located within walking distance of downtown destinations and has light rail connections. The two downtown Ft. Worth stations are located within walking distance of downtown destinations; one station is located at an intermodal transfer center. The route has a mix of single and double track and is used exclusively by passenger trains. Service began in 1997 from Dallas and extended west over time, reaching Ft. Worth in 2001.
- **Virginia Railway Express (VRE)**, which operates two branches in Northern Virginia that serve Washington, DC. Washington Union Station and five other stations have heavy rail connections. The route is multiple-track and is shared with freight and intercity passenger trains. Service started in 1992.

Two larger operators, in terms of number of the number of routes operated, are also shown in the graphs in this section, but are not included in the peer averages. Maryland Rail Commuter operates three routes in the Baltimore-Washington region. Metrolink operates seven routes in the greater Los Angeles area. These agencies are included to provide comparative results of agencies somewhat larger than Tri-Rail's current size.

Two peer agencies, Sounder and Altamont Commuter Express, started service during the five-year analysis period. Thus, the peer average in 2002 reflects seven agencies, whereas the peer average in 1998 reflects only five agencies. Consequently, the graphs in this section also show a five-agency trend line for comparison. The text accompanying each measure notes when the inclusion of ACE and Sounder significantly influences the peer trend.

4.4 Performance Evaluation

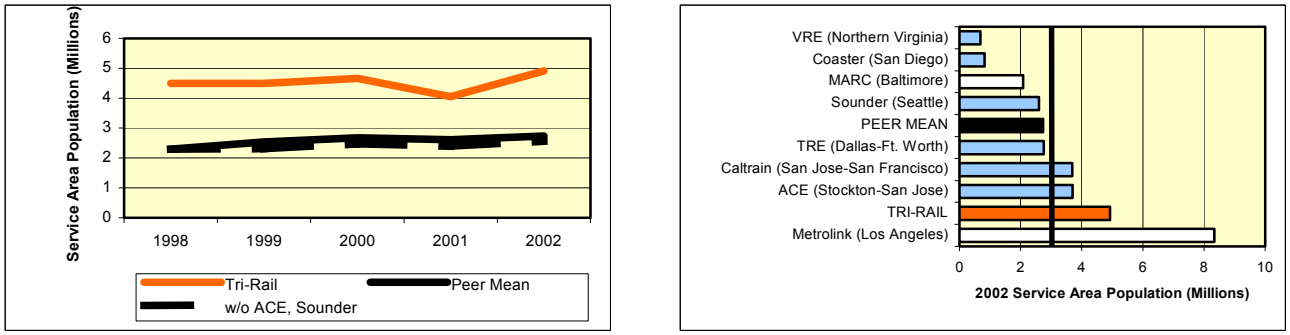
4.4.1 General Measures

General measures describe basic characteristics of each system, such as the number of people within their service area, the size of their service area, the number of passengers, and the number of miles of service provided.

Service Area Population

The NTD follows the Americans with Disabilities Act (ADA) definitions in determining service area. For rail modes, the service area is defined as a 0.75-mile circle around each station (up to 1.5 miles at terminal stations). The service area population is defined by the NTD as the population within these circles. However, many agencies, including Tri-Rail, do not follow the NTD definition and report a different population. Tri-Rail reports the total population of the three counties it serves: Palm Beach, Broward, and Miami-Dade. Sounder, Caltrain, and ACE appear to do the same. The remaining peer agencies report a number less than the combined county area, but greater than the number that would be expected using the NTD definition. This inconsistency in how population is reported makes system comparisons more difficult, particularly for the "per-capita" measures reported later. Figure 4-1 presents the comparative analysis.

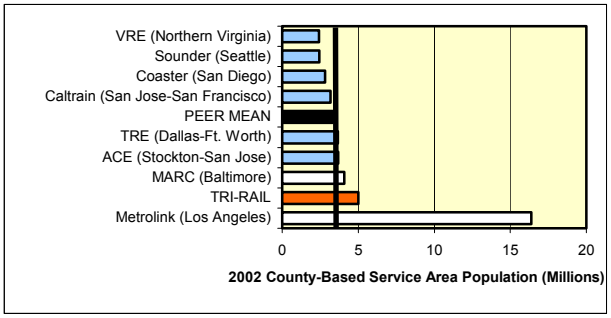
Figure 4-1
Service Area Population Comparison – Commuter Rail



SFRTA's 2002 reported service area population of 5.0 million was the highest among the peer systems and about 80% higher than the peer average. SFRTA's service area population increased by 9% over the five-year period.

When all systems are compared based on total county population (see Figure 4-2), Tri-Rail would still have the largest service area population, 51% higher than the peer group average:

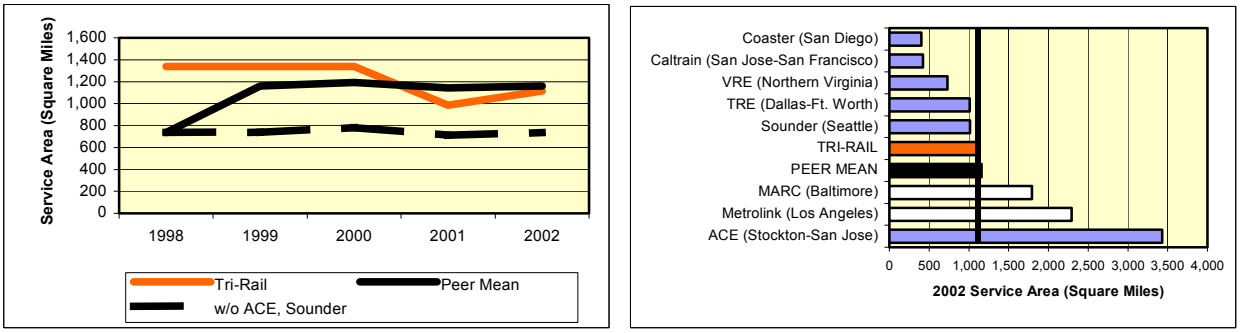
Figure 4-2
County-Based Service Area Population Comparison – Commuter Rail



Service Area Size

None of the peer systems (except ACE in 2002) followed the NTD definition of service area size. ACE used total county size in 1999-2001 and did not exist in 1998 (thus the large increase in the peer group mean in 1999). All of the other agencies used a value much larger than would result from the NTD definition, but also considerably smaller than the total county area. ACE's 2002 value was adjusted for this analysis to be consistent with its reported 1998-2001 value. Figure 4-3 presents the comparative analysis.

Figure 4-3
Service Area Size Comparison – Commuter Rail

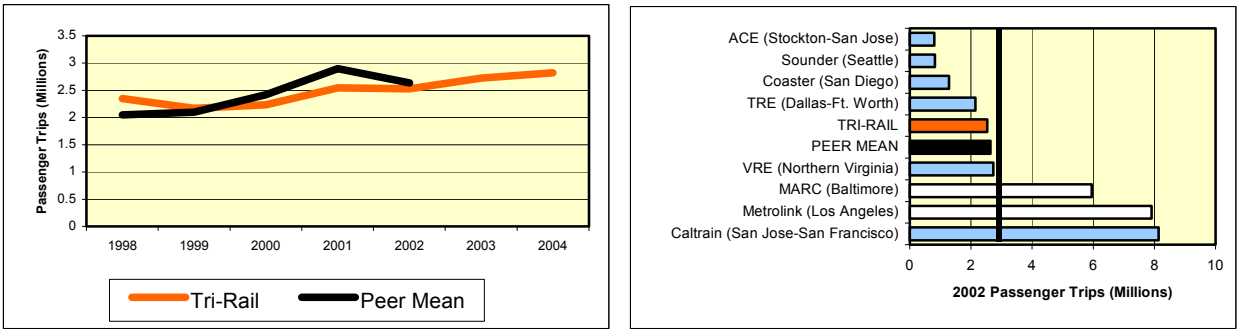


Tri-Rail's 2002 reported service area of 1,116 square miles is almost equal to the peer group mean; however, the peer group mean is distorted by the area reported for ACE. If ACE had used a similar method for calculating service area as the other peers, it probably still would have had the largest service area. Tri-Rail's reported service area size fluctuated between 1998 and 2002; none of the other peer systems reported a change in service area size.

Annual Unlinked Passenger Trips

An unlinked passenger trip represents one passenger boarding one vehicle. Transfers are counted as separate passenger trips, even though the passenger perceives it as two parts of the same trip. Because Tri-Rail passengers, like those of most other commuter rail systems, do not transfer from one train to another, the number of passenger trips reported here corresponds to the annual number of person-trips on commuter rail. Figure 4-4 presents the comparative analysis.

Figure 4-4
Annual Unlinked Passenger Trips Comparison – Commuter Rail



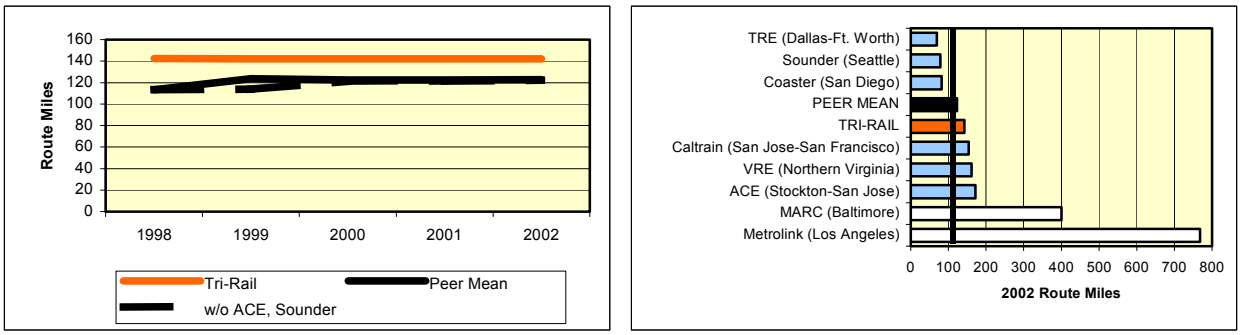
Tri-Rail's annual ridership has fluctuated around 2.35 million per year, and its 8% growth from 1998 to 2002 compares to an 8% drop in the peer system average over the same period. However, when ACE and Sounder are excluded from the average (as they did not exist during the full five-year period), the peer system average shows an increase of 17%. The noticeable drop in the peer group average from 2001 to 2002 was due to an 18% drop in Caltrain ridership, which was likely due to the poor economy in the San Francisco Bay Area that year. There is

great variability in ridership among the peer systems, ranging from one-third Tri-Rail's level (ACE) to three times its level (Caltrain). Tri-Rail's 2003 and 2004 ridership data show continuing ridership growth.

Route Miles

For commuter rail, route miles represent the mileage in each direction of a route that trains operate while in revenue service. They are different from track miles, which represent the total length of track in use. Figure 4-5 presents the comparative analysis.

Figure 4-5
Route Miles Comparison – Commuter Rail

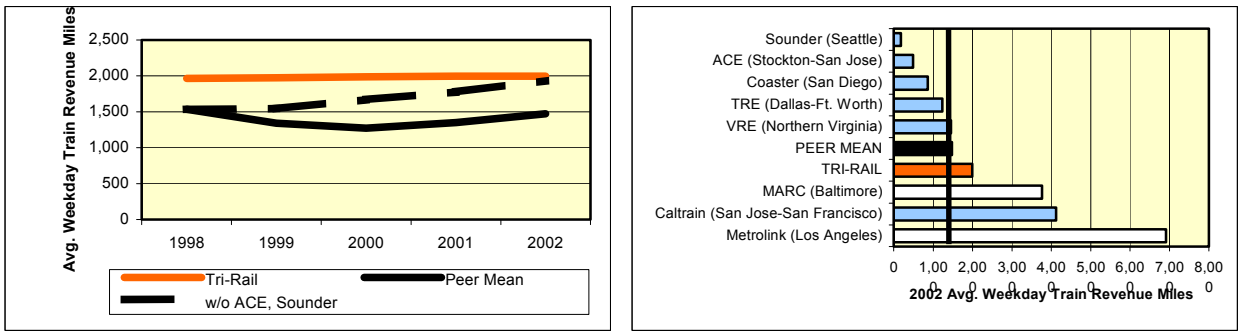


Tri-Rail's route mileage did not increase from 1998 to 2002. Except for TRE, none of the other peer systems' route miles increased. The increase in the peer trend seen in 1999 reflects the start of service of ACE. TRE's increase occurred in 2000 and was offset in the average by the start of service of Sounder. Tri-Rail's 142 route miles are about 16% higher than the peer group average.

Average Weekday Train Revenue Miles

These are the total number of miles operated by trains on an average weekday while in revenue service. The values increase as the number of trains operated increases and/or as the length of the route increases. Figure 4-6 presents the comparative analysis.

Figure 4-6
Average Weekday Train Revenue Miles Comparison – Commuter Rail

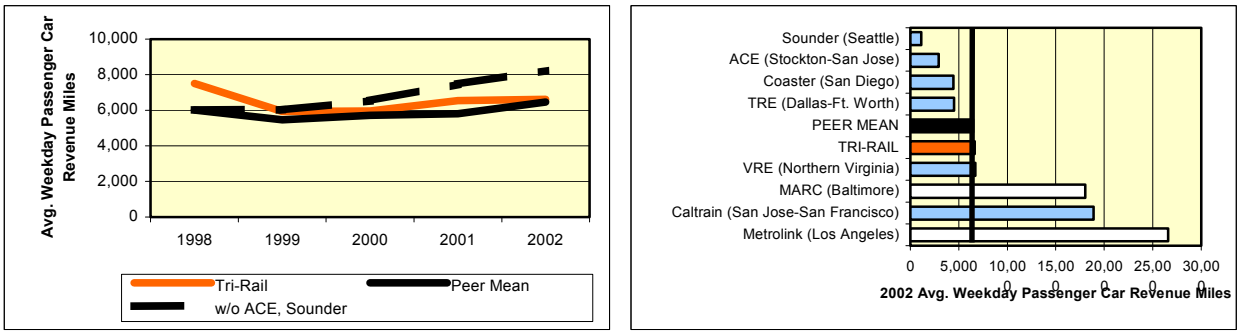


Tri-Rail's average weekday train revenue miles held steady at nearly 2,000 per day between 1998 and 2002, while the peer group average dropped 4% during that time, ending at 1,475 per day in 2002. However, when ACE and Sounder are excluded, the peer group average increased by 26%. Tri-Rail operates more train revenue miles than any operator in its peer group except Caltrain.

Average Weekday Passenger Car Revenue Miles

This is a measure of supply-the number of revenue miles operated on an average weekday by individual passenger cars, as opposed to entire trains. Values increase as route length, schedule frequency, and/or train length increases. Figure 4-7 presents the comparative analysis.

Figure 4-7
Average Weekday Passenger Car Revenue Miles Comparison

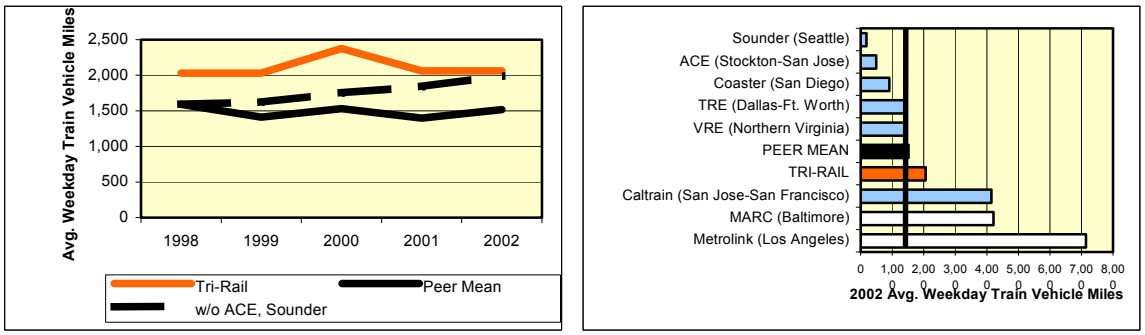


Tri-Rail's average weekday passenger car revenue miles declined 12% from 1998 to 2002, while the peer group average increased 7% (37% when ACE and Sounder are excluded). Although Tri-Rail's train revenue miles are 35% higher than the 2002 peer average, its passenger car revenue miles are only 2% higher than the peer average, indicating that Tri-Rail operates shorter trains than many of its peers.

Average Weekday Train Vehicle Miles

Vehicle miles reflect the total mileage operated by transit vehicles (in this case, locomotives and passenger cars), whether or not in revenue service. Vehicle miles will always be greater than revenue miles. For commuter rail, the location of yards and storage tracks relative to the ends of the route influence the mileage accrued while not in revenue service. Figure 4-8 presents the comparative analysis.

Figure 4-8
Average Weekday Train Vehicle Miles Comparison – Commuter Rail

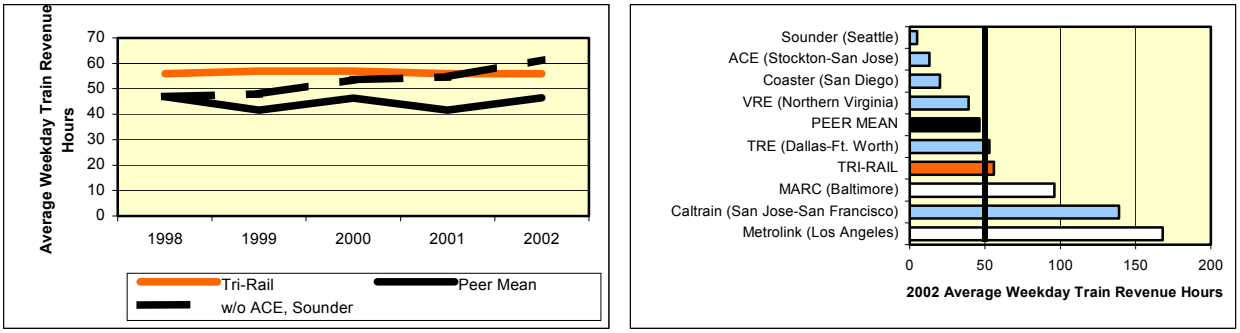


Unsurprisingly, the train vehicle miles trends are similar to the train revenue miles trends, except for an increase in Tri-Rail vehicle miles in 2000. Tri-Rail's average weekday vehicle miles increased 1.5% from 1998 to 2002, while the peer group average dropped 5% (but increased 25% when ACE and Sounder are excluded). Tri-Rail operated 36% more vehicle miles on an average weekday in 2002 than the peer group average. Tri-Rail operates 97% of its vehicle miles in revenue service, which is the same as the peer group average.

Average Weekday Train Revenue Hours

Train revenue hours are the total number of hours operated by all trains while in revenue service. Figure 4-9 presents the comparative analysis.

Figure 4-9
Average Weekday Train Revenue Hours Comparison



Tri-Rail's 56 average weekday train revenue hours were 20% higher than the 2002 peer group average. The number of revenue hours operated by Tri-Rail held steady between 1998 and 2002, while the peer group average without ACE and Sounder increased 31% during the same period.

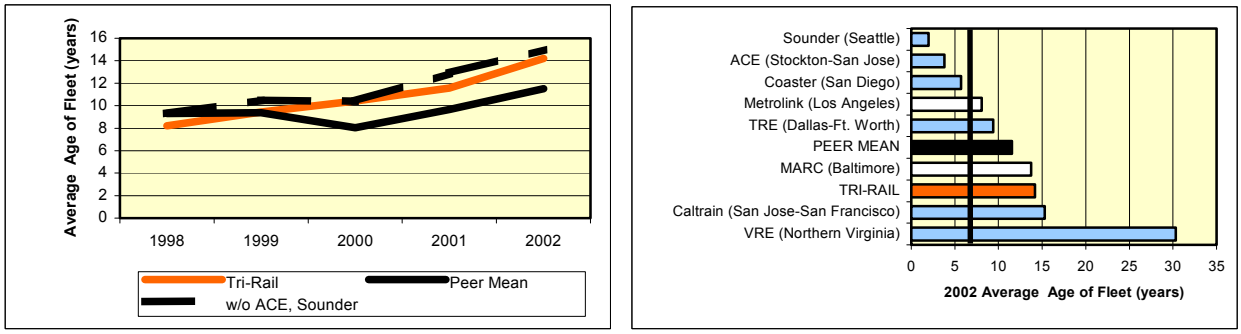
4.4.2 Vehicle Measures

Vehicle measures look at how the agency's fleet is used, and include measures of the fleet's age, vehicles available and actually operated, and the number of revenue miles per year operated by each vehicle. Vehicles include passenger cars and locomotives.

Average Age of Vehicle Fleet

This measure is self-explanatory. An older fleet can be (but does not necessarily have to be) less appealing to passengers and more prone to equipment problems. The FTA has a minimum standard of a 25-year lifespan before replacing rail vehicles, and rail vehicles typically require an overhaul halfway through their normal lifespan. Figure 4-10 presents the comparative analysis.

Figure 4-10
Average Age of Fleet Comparison – Commuter Rail



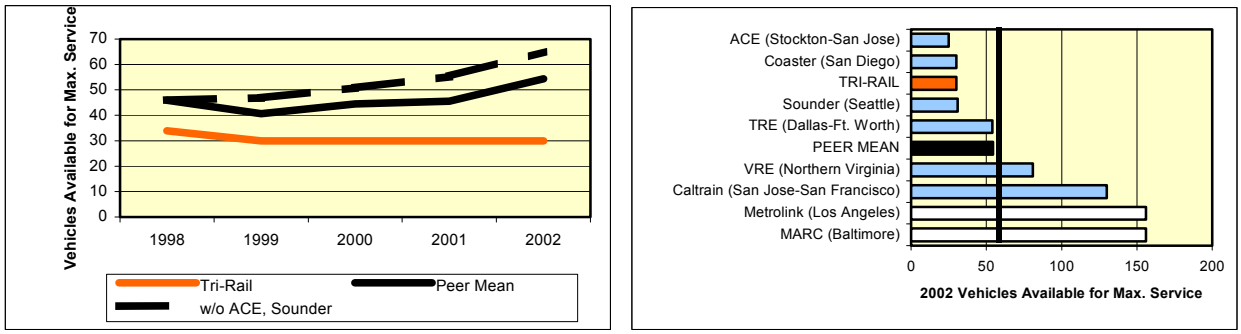
The average age of the vehicle fleet roughly tracks with the agency age, with the younger agencies more likely to have younger fleets. The biggest exception to this rule is VRE, which acquired 50 used gallery cars from Chicago's Metra to meet increased passenger demand, and which has significantly pushed up VRE's average fleet age. Tri-Rail's 2002 average fleet age of 14.2 years is above the peer group average; however, it is also the second-oldest agency in the peer group. Its vehicles are, on average, a little over halfway to their replacement age.

Vehicles Available for Maximum Service

The number of vehicles available for maximum service represents the number of vehicles available to be used in service (as opposed to the number of vehicles actually being operated in service) during the peak period on the

busiest day of the year. It differs from "vehicles in maximum service" in that it includes vehicles being used as spares or undergoing maintenance on any given day. The "spare ratio" is the percentage of vehicles available for maximum service that are not used on any given day. Some spares are required to allow routine maintenance to occur; the remainder allows the agency to provide increased capacity if needed, and to substitute for other vehicles that need to be out of service for an extended period (e.g., due to an accident). Figure 4-11 presents the comparative analysis.

Figure 4-11
Vehicles Available for Max. Service Comparison – Commuter Rail

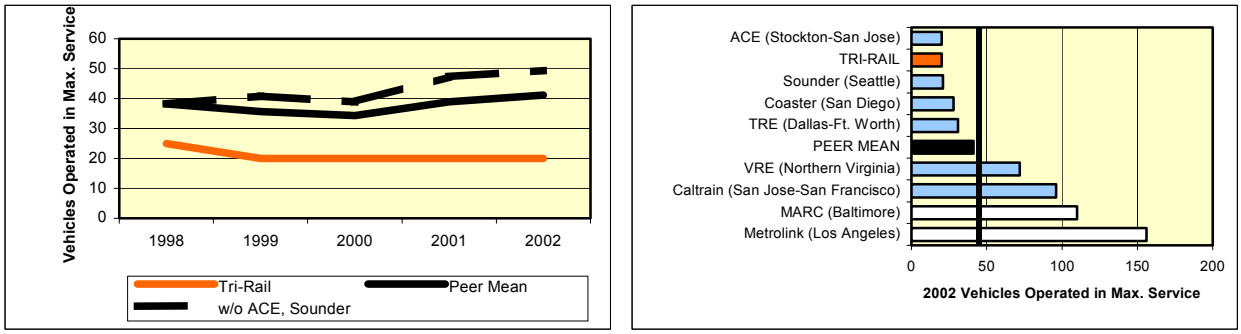


Tri-Rail's 30 vehicles available for maximum service in 2002 placed it in a group of four smaller commuter rail agencies, in terms of vehicles available for maximum service. The number of vehicles available held steady at 30 between 1999 and 2002. In contrast, the peer group trend has been to add vehicles, as agencies have expanded service to meet demand (e.g., VRE) and/or expanded the length of their routes (e.g., TRE).

Vehicles in Maximum Service

This measure reflects the number of vehicles used in peak service on the busiest day of the year. Figure 4-12 presents the comparative analysis.

Figure 4-12
Vehicles Operated in Maximum Service Comparison – Commuter Rail

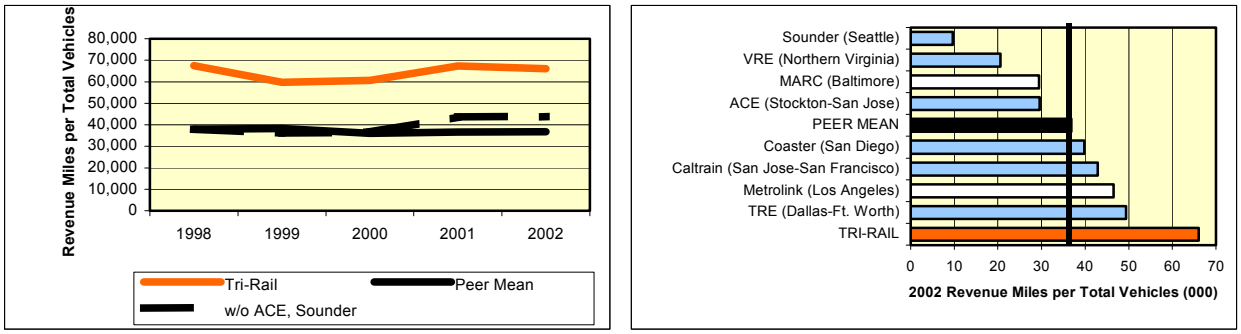


Tri-Rail's 20 vehicles operated in maximum service in 2002 tied it with ACE for the least number of vehicles operated. This number has held steady since 1999, while the five-year peer group trend has shown a small increase. In 2002, Tri-Rail had 10 spare vehicles (50% spare ratio), while the peer group average was 13 spare vehicles (32% spare ratio).

Revenue Miles per Vehicle

Revenue miles per vehicle reflect how efficiently an agency's vehicle resources are being used. It also reflects how much wear-and-tear vehicles accumulate annually. Figure 4-13 presents the comparative analysis.

Figure 4-13
Revenue Miles Per Total Vehicles Comparison – Commuter Rail



Tri-Rail had the greatest number of annual revenue miles per vehicle (66,000) in 2002 of any of the agencies evaluated, including the two non-peer agencies. Tri-Rail gets 80% more revenue miles per vehicle than the peer group average. This is because Tri-Rail operates two-directional service along a relatively long route all day long, using the smallest fleet in the peer group. The five-year trend for both Tri-Rail and the peer group has been no change in revenue miles per vehicle; however, when ACE and Sounder are excluded, the peer average increased 15%.

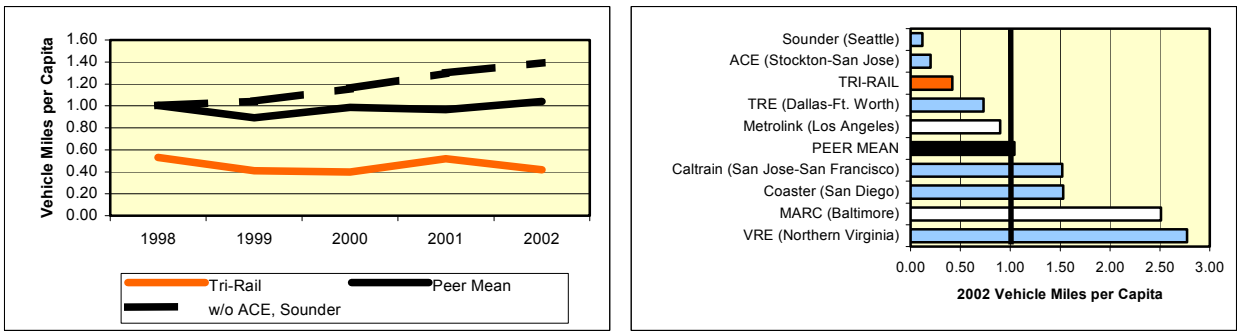
4.4.3 Service Measures

The measures in this category address service supply (how much service is offered), service utilization (how often people use the service), and service productivity (how efficiently the service is used).

Vehicle Miles per Capita

Vehicle miles per capita are a measure of supply. As noted earlier, agencies are not consistent in their definition of a service area-the more people that are included within the service area, the lower the per-capita result. Figure 4-14 presents the comparative analysis.

Figure 4-14
Vehicle Miles Per Capita Comparison – Commuter Rail

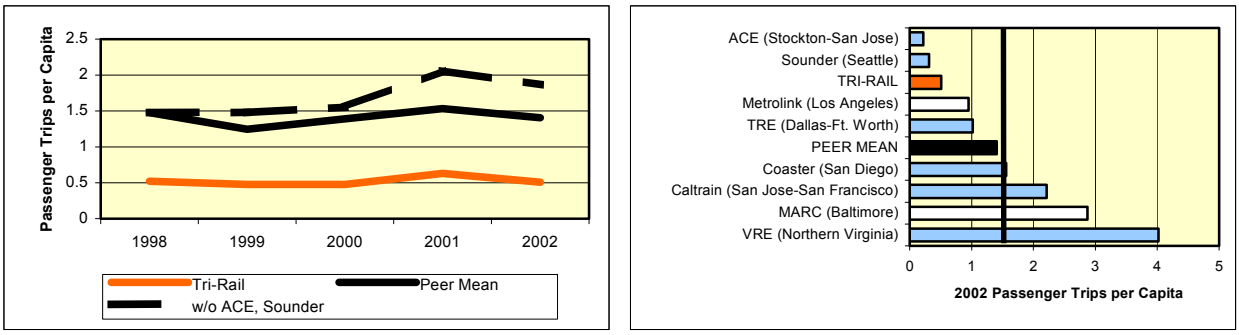


Tri-Rail's vehicle miles per capita declined 21% from 1998 to 2002, while the peer average without ACE and sounder increased 39% during the same time. This result tracks the pattern seen earlier for vehicle miles, as population has changed at a much smaller rate than vehicle miles. In terms of supply, Tri-Rail's 0.42 vehicle miles per capita in 2002 was 40% of the peer group average.

Passenger Trips per Capita

This is a utilization measure: the number of annual boardings divided by the number of people living within the service area. As noted earlier, agencies are not consistent in their definition of a service area-the more people that are included within the service area, the lower the per-capita result. Figure 4-15 presents the comparative analysis.

Figure 4-15
Passenger Trips Per Capita Comparison – Commuter Rail

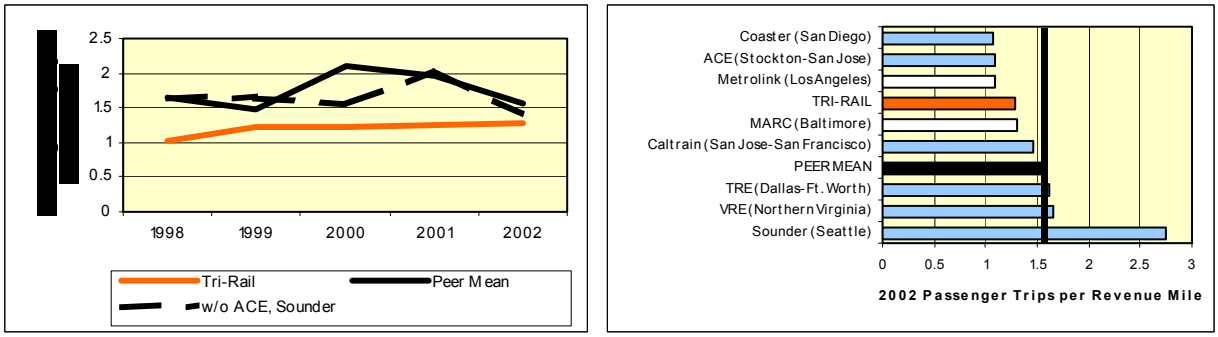


Tri-Rail's passenger trips per capita decreased 2% between 1998 and 2002, while the peer group average decreased 5% (but increased 26% when ACE and Sounder are excluded). In 2002, Tri-Rail's passenger trips per capita result (0.51) was 36% of the peer group average.

Passenger Trips per Revenue Mile

This is an efficiency measure: how many people board per mile that a train operates in service. Figure 4-16 presents the comparative analysis.

Figure 4-16
Passenger Trips Per Revenue Mile Comparison – Commuter Rail

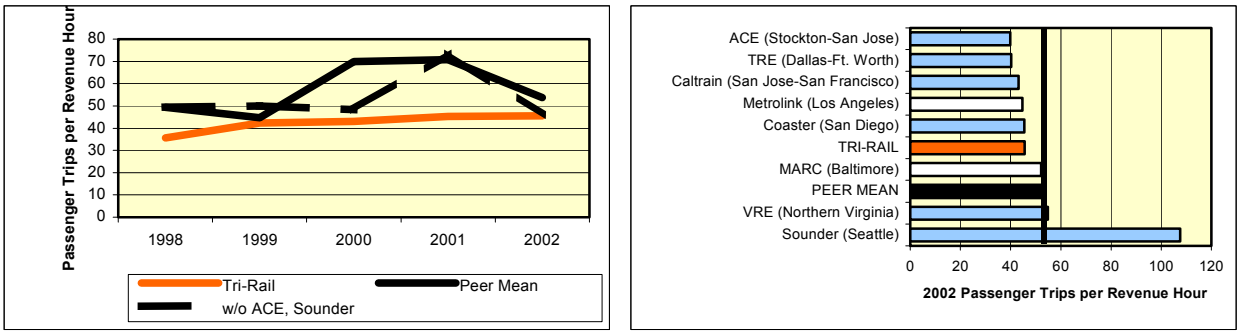


Tri-Rail's passenger trips per revenue mile steadily increased from 1998 to 2002, with a 25% increase during that time. The peer group average decreased by 5% over the same timeframe (14% without ACE and Sounder), and the trend showed more volatility. Tri-Rail's 2002 results (1.28) were 18% lower than the peer group average, but in the same range as the two larger non-peer agencies (Metrolink and MARC) that were included in the analysis. Sounder's high results are mainly a result of Sound Transit only operating two trains per direction per day during the analysis period.

Passenger Trips per Revenue Hour

This is another efficiency measure: how many people board per hour that a train operates in service. As labor costs generally form the greatest portion of operating costs, trends seen in this measure will often also be reflected in the cost-efficiency results. Figure 4-17 presents the comparative analysis.

Figure 4-17
Passenger Trips Per Revenue Hour Comparison – Commuter Rail



Trends for passenger trips per revenue hour were similar to those for passenger trips per revenue mile: Tri-Rail increased steadily by 28% between 1998 and 2002, while the peer group average rose more unevenly by 9% (but decreased by 7% without ACE and Sounder). Tri-Rail was in the upper half of the peer group for this measure, with 46 trips per revenue hour in 2002.

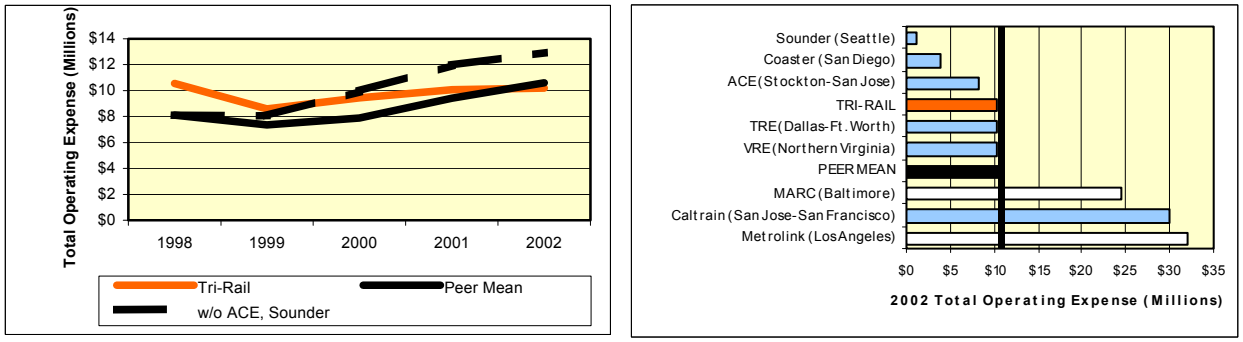
4.4.4 Financial Measures

The financial measures look at the costs of providing service (by different categories) and the amount of revenue generated. Section 3.3.5 addresses cost-efficiency measures.

Total Operating Expenses

This measure is the sum of all expenses involved with operating vehicles. Figure 4-18 presents the comparative analysis.

Figure 4-18
Total Operating Expense Comparison – Commuter Rail

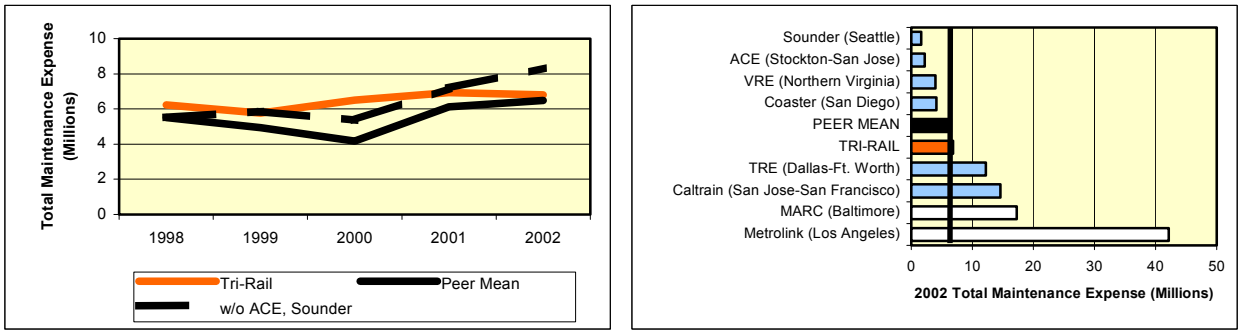


Tri-Rail's operating expenses declined 3% from 1998 to 2002, while the number of passenger car revenue miles operated declined 12%. The peer group operating expenses increased by 31% during the same timeframe (60% without ACE and Sounder), while the number of passenger car revenue miles operated increased by 7% (37%). Tri-Rail's 2002 annual operating expenses were 4% lower than the peer group average.

Total Maintenance Expenses

This measure is the sum of all expenses involved with maintaining vehicles. Figure 4-19 presents the comparative analysis.

Figure 4-19
Total Maintenance Expense Comparison – Commuter Rail

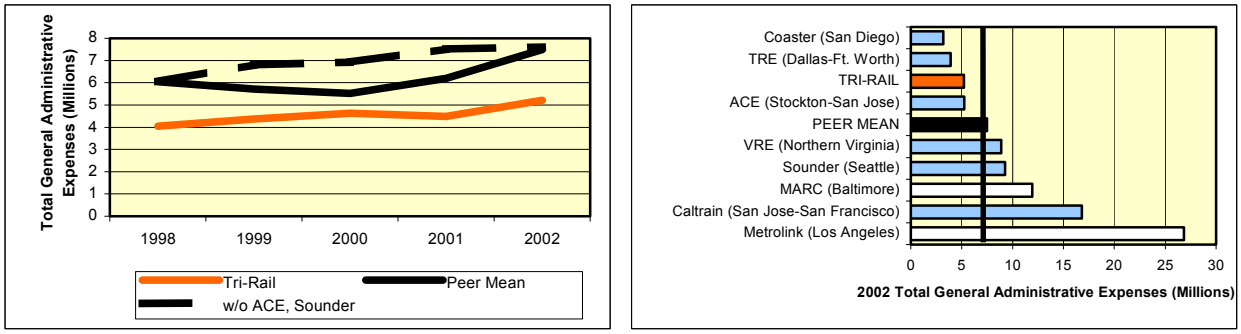


Tri-Rail's maintenance expenses increased 9% from 1998 to 2002, while the number of passenger car revenue miles operated declined 12%. The peer group maintenance expenses increased by 18% during the same timeframe (51% without ACE and Sounder), while the number of passenger car revenue miles operated increased by 7% (37%). Tri-Rail's 2002 annual maintenance expenses were 5% higher than the peer group average.

Total General Administrative Expenses

This measure is the sum of all expenses involved with agency administration. Figure 4-20 presents the comparative analysis.

Figure 4-20
Total General Administrative Expenses Comparison – Commuter Rail

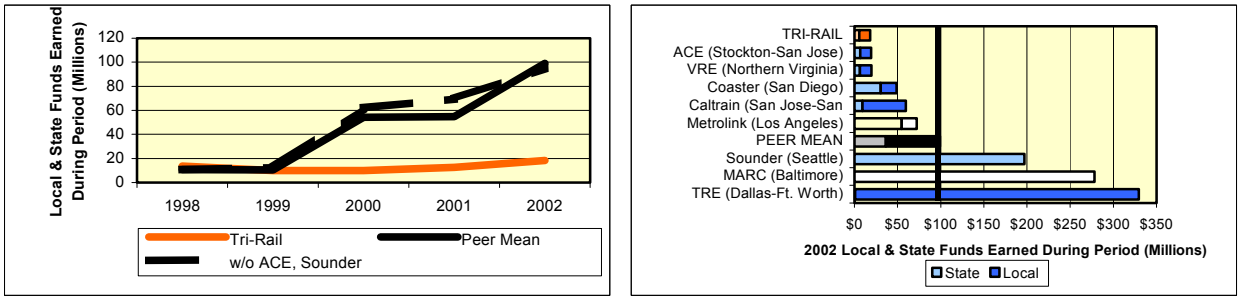


Tri-Rail's administrative expenses increased 29% from 1998 to 2002, compared to the peer group average of 24%. Tri-Rail's 2002 annual administrative expenses were 30% below the peer group average.

Total State and Local Revenue

This measure indicates the total revenue (both capital and operating) received by agencies from state and local sources. Figure 4-21 presents the comparative analysis.

Figure 4-21
Total State and Local Revenue Comparison – Commuter Rail

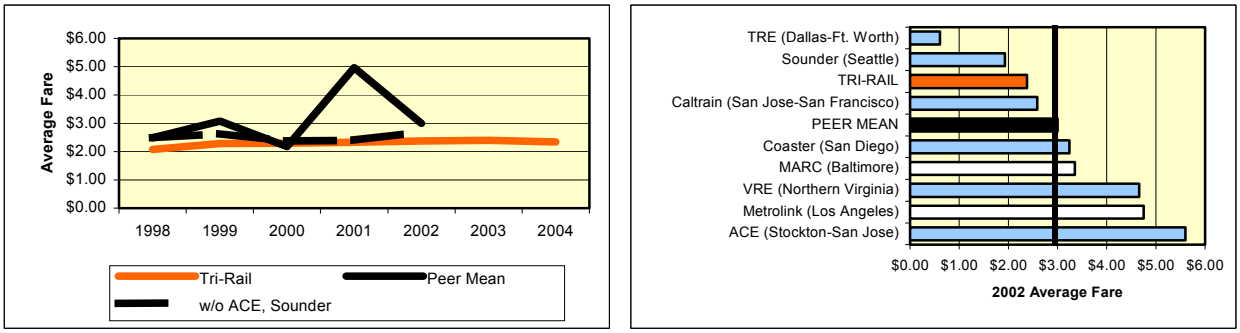


Tri-Rail's state and local revenue increased by 35% from 1998 to 2002. Comparisons with the peer group are difficult to make because of large amounts of money received for capital projects by some systems. In 2002, Tri-Rail's state and local revenue was the lowest among the peer systems.

Average Fare

Average fare is derived by dividing total passenger fare revenue by the number of passenger trips. Figure 4-22 presents the comparative analysis.

Figure 4-22
Average Fare Comparison – Commuter Rail



Tri-Rail's average fare increased 14% from 1998 to 2002 (to $2.38), while the peer group average increased 21% (to $3.00). Tri-Rail's 2002 average fare was 21% lower than the peer group average. Tri-Rail's average fare decreased slightly from 2002 to 2004.

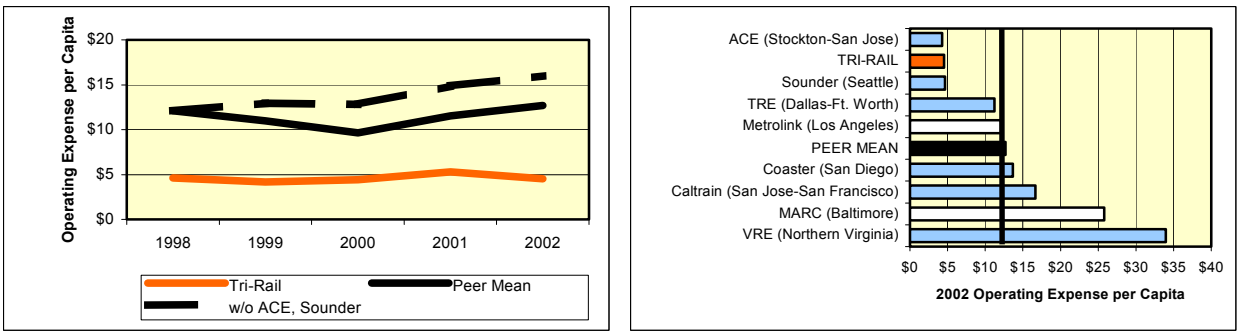
4.4.5 Efficiency and Effectiveness Measures

The financial efficiency measures look at the costs of providing service, compared to various factors.

Operating Expense per Capita

This measure is derived from total non-capital expenses, divided by service area population. It can be used to compare between regions the amount of money devoted to transit. As noted earlier, agencies are not consistent in their definition of a service area-the more people that are included within the service area, the lower the per-capita result. Figure 4-23 presents the comparative analysis.

Figure 4-23
Operating Expense Per Capita Comparison – Commuter Rail

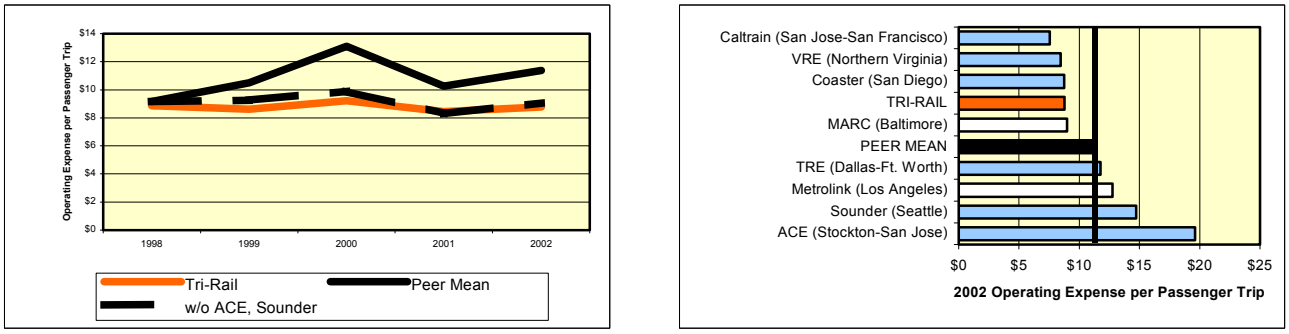


Tri-Rail's operating expense per capita declined 2% from 1998 to 2002, compared to a 5% increase in the peer group average during the same period (32% without ACE and Sounder). Given that train revenue miles remained steady over this period, this result suggests that Tri-Rail service has been provided more efficiently. The amount of money expended on commuter rail operations for Tri-Rail in 2002 was about one-third the peer group average.

Operating Expense per Passenger Trip

This measure looks at the cost incurred per passenger boarding. Figure 4-24 presents the comparative analysis.

Figure 4-24
Operating Expense Per Passenger Trip – Commuter Rail

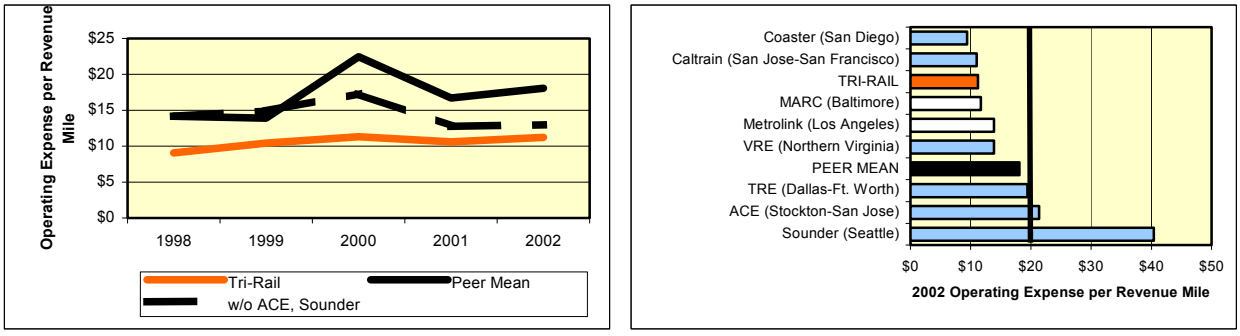


Tri-Rail's cost per trip declined 1% from 1998 to 2002, as did the peer group average when ACE and Sounder are excluded. In 2002, Tri-Rail's cost per trip ($8.79) was below the peer group average. Tri-Rail was in the middle of the seven peer group agencies in 2002 for cost per trip.

Operating Expense per Revenue Mile

Operating expense per revenue mile is often used for planning purposes, along with the next measure, operating expense per revenue hour. Figure 4-25 presents the comparative analysis.

Figure 4-25
Operating Expense Per Revenue Mile Comparison – Commuter Rail

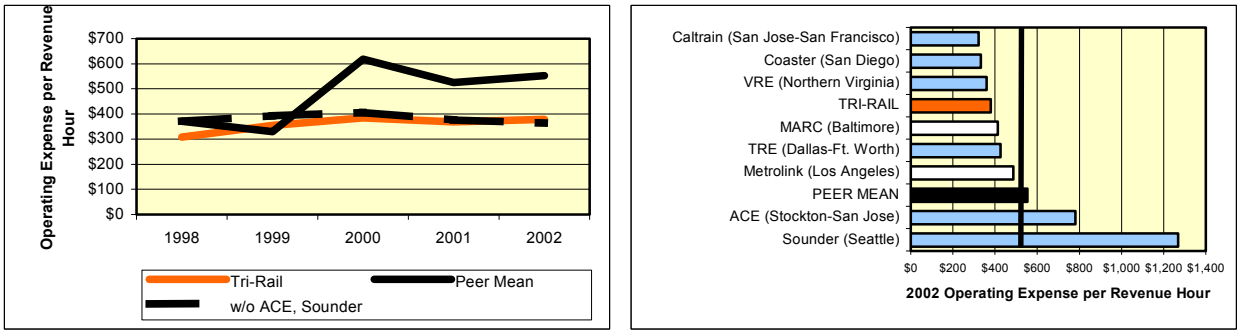


Tri-Rail's cost per mile increased 24% from 1998 to 2002, while the peer group average increased 28% (but decreased 8% without ACE and Sounder). In 2002, Tri-Rail's cost per mile ($11.22) was below the peer group average. Tri-Rail was the third lowest of the seven peer group agencies in 2002 for cost per mile.

Operating Expense per Revenue Hour

This is another planning measure. Hourly costs tend to be influenced more by wage rates. Figure 4-26 presents the comparative analysis.

Figure 4-26
Operating Expense Per Revenue Hour Comparison – Commuter Rail

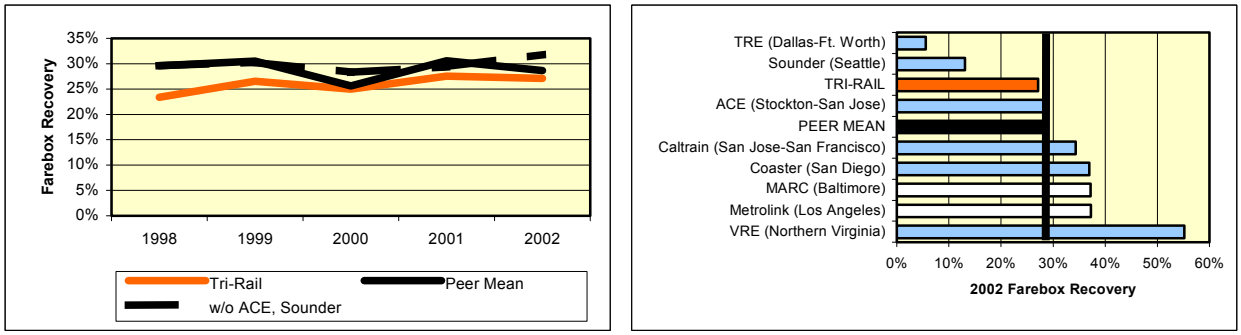


Tri-Rail's cost per hour increased 23% from 1998 to 2002, while the peer group average without ACE and Sounder decreased 2%. In 2002, Tri-Rail's cost per hour ($379) was below the peer group average. Tri-Rail was in the middle of the seven peer group agencies in 2002 for cost per hour.

Farebox Recovery

This measure reflects how much of the agency's operating expenses are covered by fare revenue. Figure 4-27 presents the comparative analysis.

Figure 4-27
Farebox Recovery Comparison – Commuter Rail



Tri-Rail's farebox recovery ratio increased from 23% to 27% between 1998 and 2002, while the peer group average dropped from 30% to 29%. Tri-Rail's 2002 farebox recovery was close to the peer group average.

4.4.6 Quality of Service Measures

The NTD generally does not collect data on quality of service (performance measures reflecting the passenger point-of-view), other than the safety and security measures and the service span. Two other measures, average headway and average speed, can be derived from NTD data, using a method developed for FDOT's Mobility Performance Measures program.

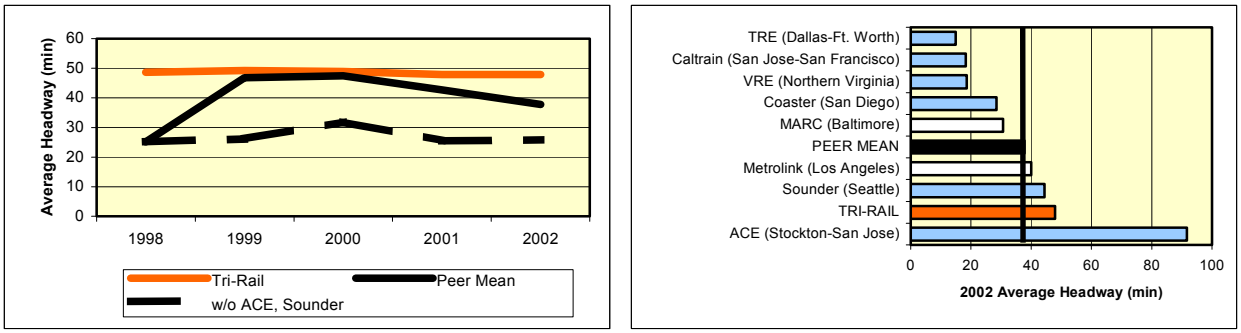
Average Peak Headway

Average peak headway reflects the average time between trains during peak periods. As this measure is derived from four NTD measures, it does not exactly correspond to the headway one would calculate if one had access to each agency's schedule for each year, but the results are reasonably close to the actual value.

Average train spacing during peak periods is derived from the NTD's "Average Weekday Total Number of Trains/ Vehicles in Operation" divided by "Total Directional Route Miles." Next, average train speed is derived by dividing

revenue miles by revenue hours. Multiplying the average peak train spacing (veh/mi) by the average speed (mi/h) gives an average peak service frequency, in trains per hour. Finally, dividing this result into 60 minutes per hour gives the average peak headway in minutes. Figure 4-28 presents the comparative analysis.

Figure 4-28
Average Headway Comparison – Commuter Rail

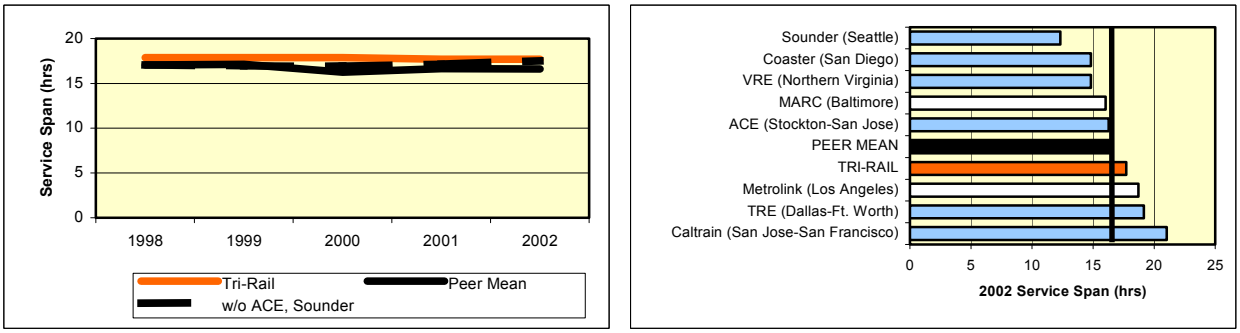


Tri-Rail's average headway remained steady at 48-49 minutes between 1998 and 2002. The peer group trend strongly reflects ACE's very long headways; when ACE and Sounder are removed from the average, the peer group shows virtually no change overall (25-26 minutes). Tri-Rail's 2002 headway of 48 minutes was the second longest in the peer group, reflecting the headway limitations imposed by its single-track operation.

Service Span

The NTD defines service span as the length of time between the start of service and the end of service. This is a less-useful measure than the Transit Capacity and Quality of Service Manual's "hours of service," which only counts those hours when service is actually provided. Thus, the measure reported below provides a sense of how early and late in the day that service is provided, but not whether service is provided in the middle of the day. Figure 4-29 presents the comparative analysis.

Figure 4-29
Service Span Comparison – Commuter Rail

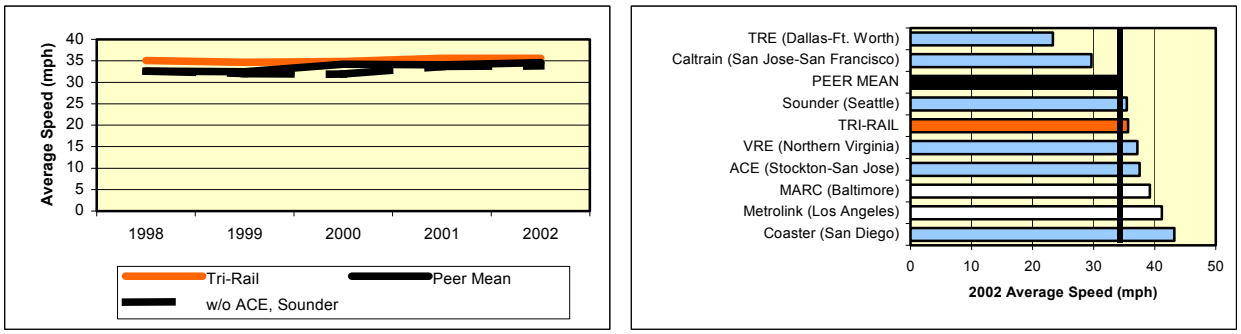


Tri-Rail's service span held steady at about 17.75 hours between 1998 and 2002. The peer group average declined from 17 hours to 16.5 hours during that same time.

Average Speed

Average speed is derived from revenue miles divided by revenue hours. Commuter rail speed is influenced by track conditions, the number of other trains sharing the tracks, and the number of stations. Figure 4-30 presents the comparative analysis.

Figure 4-30
Average Speed Comparison – Commuter Rail



4.4.7 Peer Evaluation Results Summary

General Measures

Tri-Rail is close to the peer group average in most of the descriptive system measures: service area size, annual ridership, route miles, passenger car revenue miles, and percent of vehicle miles in revenue service. This is a desirable outcome, as it indicates the peer agencies are similar to Tri-Rail in many ways. Tri-Rail is above the peer group average in train revenue miles, train vehicle miles, and train revenue hours, and is the largest system in terms of service area population, although this population includes the majority of Miami-Dade County not directly served by Tri-Rail. Tri-Rail's ridership grew by 8% between 1998 and 2002, while the ridership of peer systems in existence during the entire five-year period increased 17%.

Vehicle Measures

Tri-Rail's average fleet age is second highest among the peer group, but in line with expectations, given most of the peer agencies' relative youth. The number of vehicles (passenger cars and locomotives combined) available to and used by Tri-Rail is among the lowest of the peer group. At the same time, the number of revenue miles operated by vehicle is the highest among the peer group. Tri-Rail operates a small number of vehicles, compared to its peers, but keeps its vehicles in use for a much greater period of time during the day.

Service Measures

Tri-Rail is below the peer group average in vehicle miles and passenger trips per capita, even when accounting for differences in how service areas are defined. Tri-Rail is below the peer group average in passenger trips per revenue mile, and near the peer group average for passenger trips per revenue hour. All of these values would be expected to improve substantially once service is increased following the completion of the double-tracking project in 2006.

Financial Measures

Tri-Rail is near the peer group average for operating and maintenance expenses and is above average for administrative expenses (i.e., Tri-Rail has lower administrative expenses than most of its peers). Tri-Rail's combined state and local revenue is the smallest of any of the peer systems, even when accounting for other agencies' non-recurring revenue received for capital improvements.

Efficiency and Effectiveness Measures

Tri-Rail is above average (i.e., has lower costs) compared to its peers in operating cost per capita and operating cost per revenue mile. Note, however, that the cost-per-capita result is due to the low amount of service operated and the larger service area definition, compared to Tri-Rail's peers. Tri-Rail is near the peer group average for operating cost per passenger trip, operating cost per revenue hour, and farebox recovery ratio.

Quality of Service Measures

Tri-Rail has the second-longest headway of any of the peer systems; however, headways should improve significantly once the double-tracking project is completed in 2006. Tri-Rail's span of service and average speed are close to the peer group average.

Overall Performance

Tri-Rail's performance is close to the peer group average in many ways. The only areas where performance is consistently below average are areas related to the amount of service provided, and these results will improve once service is expanded following the completion of the double-tracking project. Trends for many measures are positive, reflecting a general improvement in performance between 1998 and 2002.

4.5 Feeder Bus Evaluation

4.5.1 Introduction

This section presents a peer group analysis of SFRTA's feeder bus operations. As discussed in Section 3.2.1, comparisons are constrained by the following factors:

- SFRTA contracts out its feeder bus service in Broward County to BCT. Feeder bus service in other two counties are directly operated by Palm Tran and MDT; thus, all of the feeder bus service is reported in the NTD as part of other agencies' overall service and cannot be separated out from the those agencies' regular service.
- SFRTA data are for the year 2004, and generally are based on May and June 2004 data supplied directly by the agency for the Broward County routes only, with post-processing performed by the consultant team. The peer agencies' data are from the NTD for the year 2002 (the most recent data available).
- None of the peer commuter rail agencies directly operates feeder bus service; therefore, it is not possible to directly compare SFRTA's feeder bus operations to other commuter rail feeder buses. Instead, the comparisons are to peer agencies that provide feeder service to commuter rail, as part of their overall service. This is not an ideal comparison, because of the differences in the scale of and market for SFRTA's feeder-bus service, compared to the county-wide bus operations operated by the peer agencies, but it is the best comparison possible with the available data.
- SFRTA provided feeder bus operations data only for the years 2003 and 2004; therefore, no trend analysis was performed.

Fewer measures are analyzed for feeder bus service than were analyzed for commuter rail service. This is due to two reasons: (1) fewer measures could be generated from the data supplied by SFRTA than are available in the NTD; and (2) per-capita measures were omitted, as they would compare SFRTA's feeder-bus service (with a limited service area) to county-wide systems, which is not an apples-to-apples comparison.

4.5.2 Peer Group Selection

Six peer agencies were selected for this analysis. Three consist of the agencies that provide Tri-Rail feeder bus services: Palm Tran, BCT, and MDT. The other three are West Coast agencies that (1) provide service to commuter rail lines used for the commuter rail peer review; (2) are located in metropolitan areas, but are not oriented toward serving the central city or cities; and (3) are located in areas with relatively mild climates. These other three agencies are:

- North San Diego County Transit District (NCTD), which provides feeder service to the Coaster commuter rail line along the northern San Diego County coast in California, as well as local bus service along the coast and inland valleys.

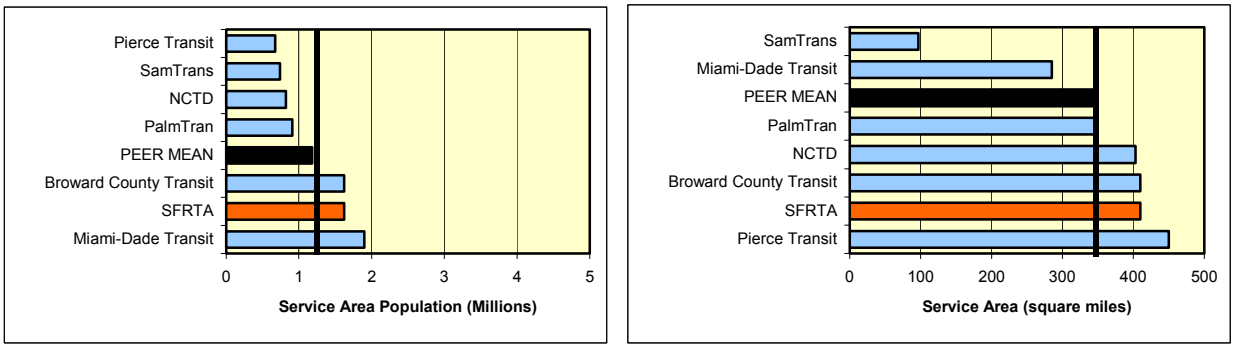
- San Mateo County Transit District (SamTrans), which provides feeder service to Caltrain within San Mateo County, California, located between San Francisco and San Jose, along with local service within the urban area along San Francisco Bay, service to and between the more rural communities along the coast, and commute express service to San Francisco.
- Pierce Transit, serving Pierce County (Tacoma and vicinity), south of Seattle, including service to Sounder stations.

4.5.3 General Measures

Service Area Population and Size

The NTD follows the Americans with Disabilities Act (ADA) definitions in determining service area. For buses, the service area is defined as a 0.75-mile corridor on either side of a transit route, plus a 0.75-mile radius around the end of a route, and any small areas between corridors that are surrounded by corridors. The service area population is defined by the NTD as the population within these corridors and other small areas. All of the peer agencies report the population of the county they serve, except NCTD, which reports the population of the northern portion of San Diego County. Because SFRTA's contracted feeder bus service serves only Broward County, this analysis uses the same service area population and size for SFRTA that Broward County Transit reports. Figure 4-31 presents the comparative analysis.

Figure 4-31
Service Area Population and Size Comparison – Feeder Bus

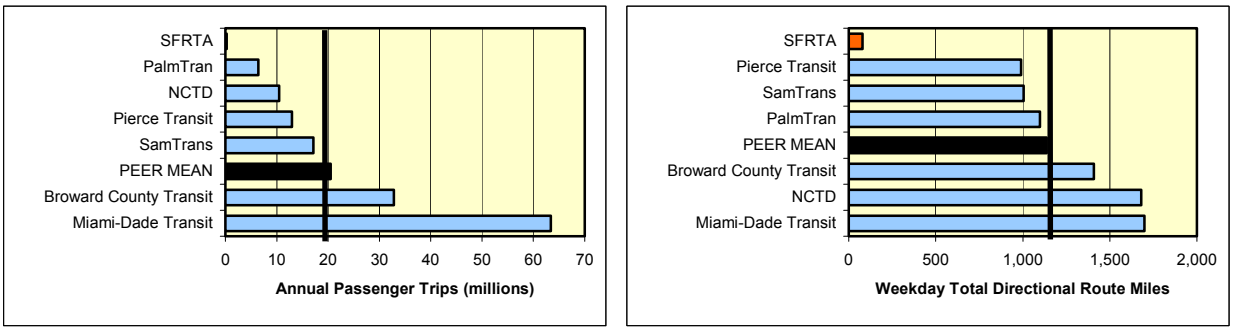


The political boundaries of SFRTA are considerably larger than most of its peers, as suggested by the graphs. However, the actual service area for SFRTA's Broward County feeder bus service are considerably smaller than the peer agencies, as will be illustrated by the next two sets of graphs.

Annual Unlinked Passenger Trips and Route Miles

An unlinked passenger trip represents one passenger boarding one vehicle. Transfers are counted as separate passenger trips, even though the passenger perceives it as two parts of the same trip. Bus route miles represent the total mileage in each direction of all streets with bus service. SFRTA supplied the number of miles operated by each feeder route in Broward County; therefore, SFRTA's route miles will be slightly overstated to the extent that routes overlap near stations. Figure 4-32 presents the comparative analysis.

Figure 4-32
Annual Passenger Trips and Weekday Directional Route Miles Comparison – Feeder Bus

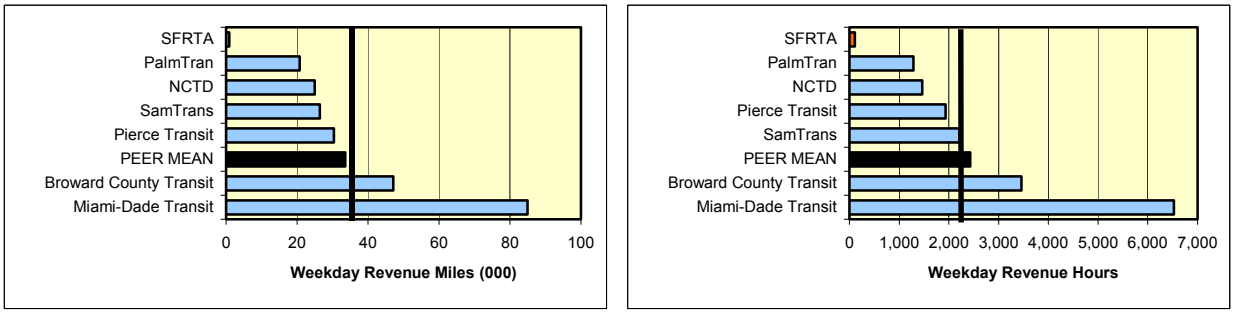


SFRTA's Broward County feeder bus services carried approximately 251,000 passengers in 2004 (based on an average of May and June monthly ridership), reflecting the limited number of routes operated compared to the remainder of the peer group. The Broward County routes have a total of 78 weekday directional route miles.

Average Weekday Revenue Miles and Average Weekday Revenue Hours

Average weekday revenue miles are the total number of miles operated by buses on an average weekday while in revenue service. Revenue miles increase as the number of buses operated increases and/or as the length of routes increases. A revenue hour is one hour operated by one bus while in service. Figure 4-33 presents the comparative analysis.

Figure 4-33
Weekday Revenue Miles and Hours Comparison – Feeder Bus



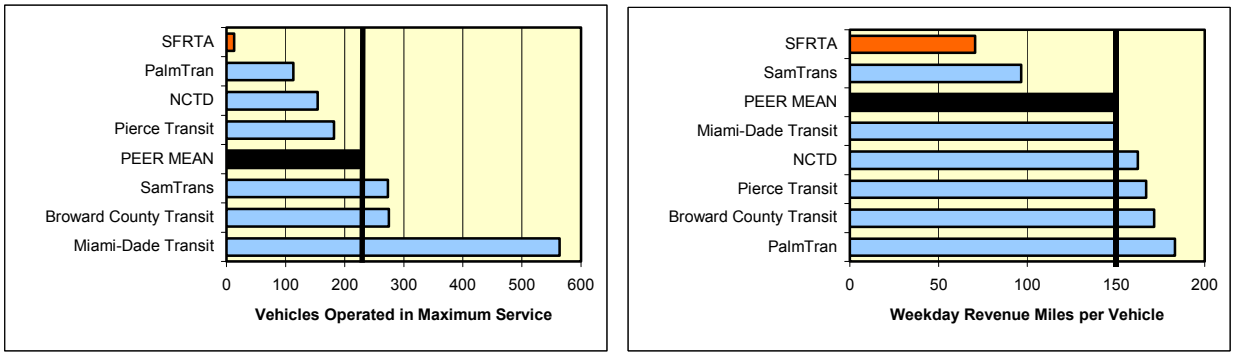
SFRTA's Broward County routes operate 918 revenue miles and 112 revenue hours per weekday.

4.5.4 Vehicle Measures

Vehicles in Maximum Service and Revenue Miles per Vehicle

Vehicles in maximum service reflect the number of vehicles used in peak service on the busiest day of the year. Revenue miles per vehicle reflect how efficiently an agency's vehicle resources are being used. It also reflects how much wear-and-tear vehicles accumulate annually. Figure 4-34 presents the comparative analysis.

Figure 4-34
Vehicles Operated in Maximum Service and Weekday Revenue Miles Per Vehicle Comparison – Feeder Bus

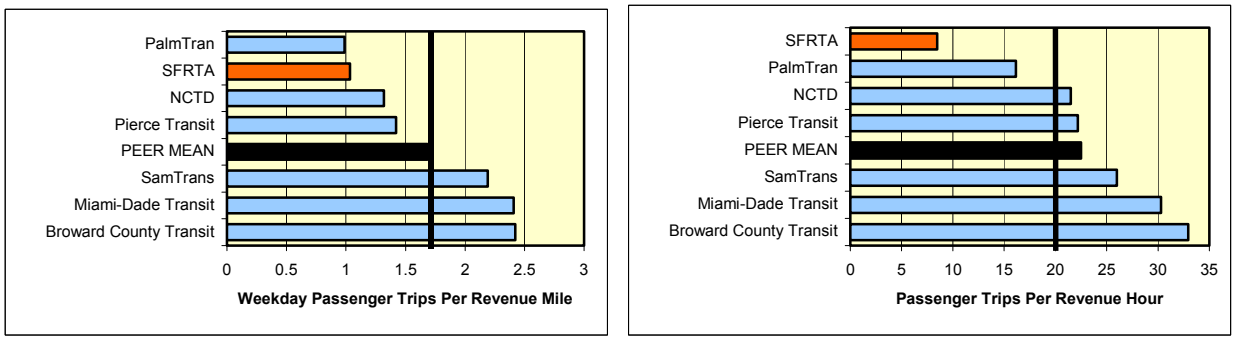


4.5.5 Service Productivity Measures

Passenger Trips per Revenue Mile and Passenger Trips per Revenue Hour

These are efficiency measures: the number of people that board per mile or per mile while a bus is in service. Figure 4-35 presents the comparative analysis.

Figure 4-35
Passenger Trips Per Revenue Mile and Hour Comparison – Feeder Bus



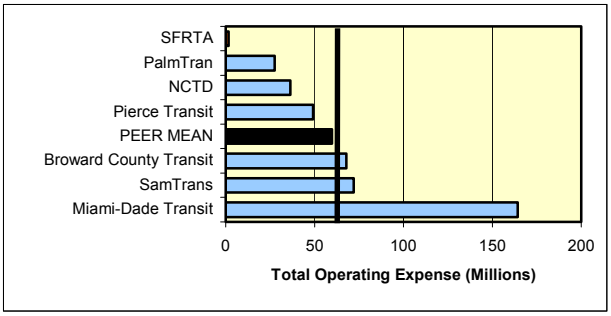
Tri-Rail's Broward County feeder buses carry 1.03 passengers per revenue mile on weekdays, and 8.48 passengers per revenue hour. The per-revenue-hour value is affected by the relatively long layovers between trips, as buses wait to meet the next train.

4.5.6 Financial Measures

Total Operating Expenses

This measure is the sum of all expenses involved with operating buses. SFRTA currently pays $45 per hour for smaller buses (all routes except weekday service on the Ft. Lauderdale route) and $60 per hour for larger buses, with a 3-hour minimum per bus for each service period. Based on these values, and the amount of revenue hours operated per week, the total cost of SFRTA's Broward County feeder bus service was approximately $1.56 million in 2004. Figure 4-36 presents the comparative analysis.

Figure 4-36
Total Operating Expense Comparison – Feeder Bus

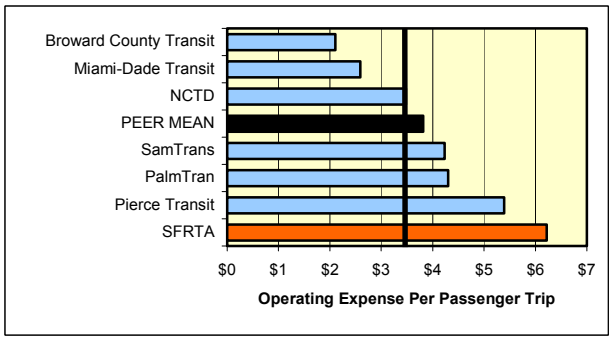


4.5.7 Efficiency and Effectiveness Measures

Operating Expense per Passenger Trip

This measure looks at the cost incurred per passenger boarding. SFRTA's cost per boarding for the Broward County feeder service is $6.22, compared to the peer average of $3.82. Figure 4-37 presents the comparative analysis.

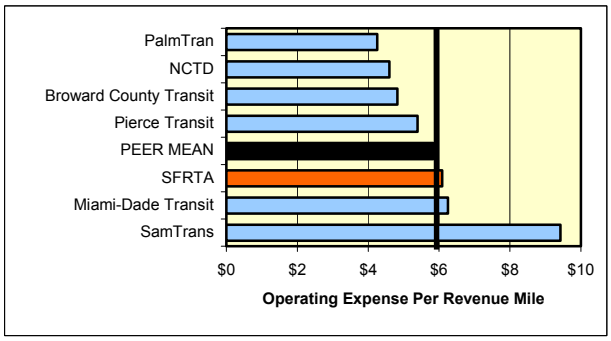
Figure 4-37
Operating Expense Per Passenger Trip Comparison – Feeder Bus

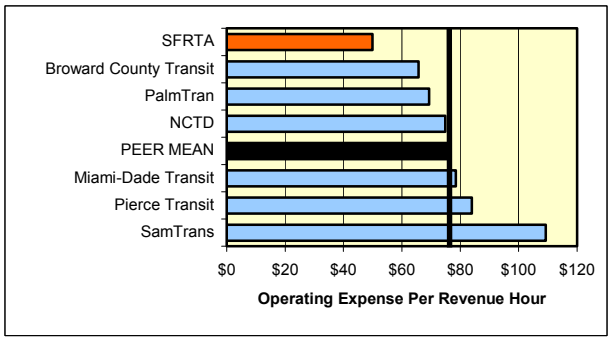


Operating Expense per Revenue Mile and Operating Expense per Revenue Hour

These measures are often used for planning purposes. Hourly costs tend to be influenced more by wage rates. SFRTA's cost per revenue mile of $5.83 is slightly higher than the peer group average of $6.03, but is quite good relative to the peer group considering the short routes that are operated. SFRTA's cost per revenue hour of $49.90 was the lowest among the peer group, which had an average cost of $75.94 per hour. Figure 4-38 presents the comparative analysis.

Figure 4-38
Operating Expense Per Revenue Mile and Hour Comparison – Feeder Bus





4.5.8 Quality of Service Measures

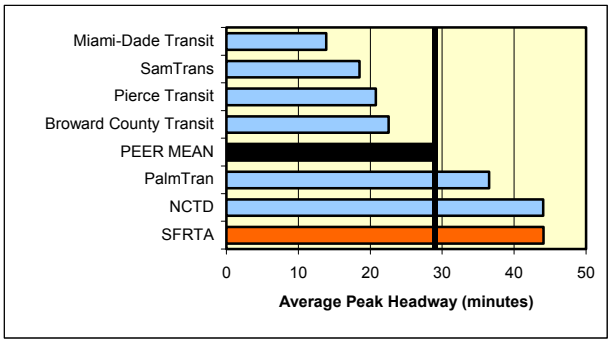
The NTD generally does not collect data on quality of service (performance measures reflecting the passenger point-of-view), other than the safety and security measures and the service span. Two other measures, average peak headway and average speed, can be derived from NTD data, using a method developed for FDOT's Mobility Performance Measures program.

Average Peak Headway

Average peak headway reflects the average time between buses during peak periods. As this measure is derived from four NTD measures, it does not exactly correspond to the headway one would calculate if one had access to each agency's schedule, but the results are reasonably close to the actual value.

Average bus spacing during peak periods is derived from the NTD's "Average Weekday Total Number of Buses/ Vehicles in Operation" divided by "Total Directional Route Miles." Next, average bus speed is derived by dividing revenue miles by revenue hours. Multiplying the average peak bus spacing (veh/mi), by the average speed (mi/h) gives an average peak service frequency, in buses per hour. Finally, dividing this result into 60 minutes per hour gives the average peak headway in minutes. SFRTA's average peak headway for the Broward County routes was 44 minutes. Figure 4-39 presents the comparative analysis.

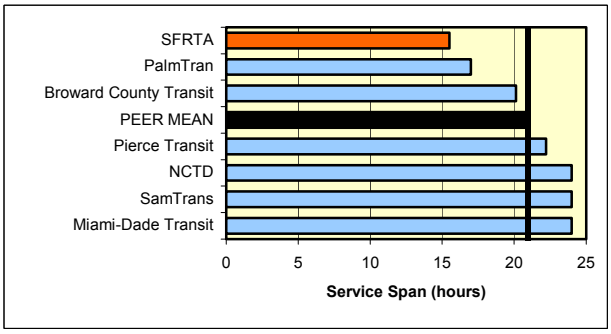
Figure 4-39
Average Peak Headway Comparison – Feeder Bus



Service Span

The NTD defines service span as the length of time between the start of service and the end of service. This is a less-useful measure than the Transit Capacity and Quality of Service Manual's "hours of service," which only counts those hours when service is actually provided. Thus, the measure reported below provides a sense of how early and late in the day that service is provided, but not whether service is provided in the middle of the day. SFRTA's service span for the Broward County routes was 15.5 hours. Figure 4-40 presents the comparative analysis.

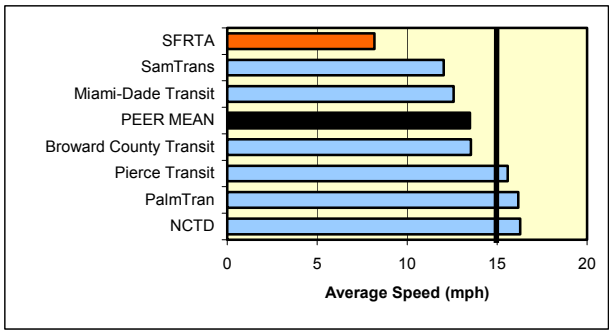
Figure 4-40
Service Span Comparison – Feeder Bus



Average Speed

Average speed is derived from revenue miles divided by revenue hours. Bus speeds are influenced by traffic congestion, the number of stops made, posted roadway speeds, and traffic signal spacing. In the case of Tri-Rail's feeder bus service, the relatively long layovers for buses waiting to meet the next train also contribute to lower speeds. Figure 4-41 presents the comparative analysis.

Figure 4-41
Average Speed Comparison – Feeder Bus



4.5.9 Peer Evaluation Results Summary

Although SFRTA's Broward County feeder bus services generally performed not nearly as well as the peer agencies' services, it should be kept in mind that the peer agency data represent all fixed-route bus service operated by countywide systems, while SFRTA's data represent service to much smaller markets. Shuttle and feeder services typically do not perform as well as regular fixed-route service in terms of ridership. Nevertheless, the cost efficiency of SFRTA's Broward County feeder services is similar to, or better than, that of the peer agencies.

SFRTA's double-tracking project should result in higher ridership, as the project will allow train frequencies to be improved, which in turn will attract more riders; however, the cost efficiency of the feeder routes could go up or down. If the new train schedule allows bus layovers to be reduced, cost efficiency would go up, as more passengers would be carried per trip, hour, and mile. However, if additional buses need to be added to routes so that a bus can meet every train, cost efficiency could go down, as the increased ridership would be offset by the increased cost of providing the additional bus service.

5. SFRTA TDP - EXISTING CONDITIONS LEVEL OF SERVICE ANALYSIS

5.1 Introduction

The concept of Level Of Service (LOS) presents a means to classify a particular performance measure using six letters ranging from "A" (the highest) to "F" (the lowest). Each letter is intended to represent the different level at which a transit system can perform, based on a given numeric measure. LOS values represent the system's performance from the users perspective. Thus, they may not reflect the optimal conditions from the operator's view.

The level of service measures reflect the passenger's perception of transit performace. The measures are different from both the economic performance measures typically reported to FTA and the vehicle-based measures used in the Highway Capacity Manual. For example, with respect to passenger loading on board a transit vehicle, a better level of service is perceived by a passenger the lesser the crowding on the vehicle; while for a transit operator, service performance is better economically the more passengers there are on a vehicle.

Service frequency and service span are two quantitative measures that can be used to describe the quality of service for a transit system. These are two of the six passenger-based LOS measures identified in the Transit Capacity and Quality of Service Manual, 2nd Edition (2003) (TCQSM), for which data is available related to existing SFRTA commuter rail and feeder bus operations. The other four LOS measures relate to service coverage, passenger loading, on-time performance, and the ratio of transit to auto travel time.

Service frequency is described as the number of times a user has access to a given mode of transit per hour. Headway is the particular measure that is used to describe the time a user has to wait between transit vehicles for the next transit vehicle to arrive that connects to the desired location. It is important to note that headway is a destination-based measure, where several transit vehicles may frequent a particular stop, but not all have the same destination. Table 5-1 presents the different LOS thresholds for service frequency as defined in the TCQSM.

Table 5-1
Service Frequency LOS

LOS	Headway (min)	Veh/h	Comments
A	<10	>6	Passengers don't need schedules
B	10-14	5-6	Frequent service, passengers consult schedules
C	15-20	3-4	Maximum desirable time to wait if bus/train missed
D	21-30	2	Service unattractive to choice riders
E	31-60	1	Service available during the hour
F	>60	<1	Service unattractive to all riders

Source: Transit Capacity and Quality of Service Manual, 2nd Edition. Exhibit 6-13.

Span of service is described as the number of hours that the transit service is offered between locations or route segments during the day. Hours of service is the particular measure that is used to describe the transit span of service. This is calculated by taking the difference between the last and first departure, plus an additional hour to account for the first hour of service. However, if the service is not provided on a continuous basis throughout the day (on hourly intervals) then number of hours is combined for each interval throughout the day that the service is provided. Table 5-2 presents the different LOS thresholds for service span as defined in the TCQSM.

Table 5-2
Hours of Service LOS

LOS	Hours of Service	Comments
A	19-24	Night or "owl" service provided
B	17-18	Late evening service provided
C	14-16	Early evening service provided
D	12-13	Daytime service provided
E	4-11	Peak hour service only or limited midday service
F	0-3	Very limited or no service

Source: Transit Capacity and Quality of Service Manual, 2nd Edition. Exhibit 6-14.

5.2 Commuter Rail Level of Service

Table 5-3 summarizes the 2002 service frequency and hours of service LOS for Tri-Rail compared to the other peer group commuter rail systems evaluated in the TDP development effort. The LOS for each measure was estimated using the guidelines provided in the TCQSM. Commuter rail services typically do not provide high frequencies due to the nature of the service. The Tri-Rail service frequency LOS of "E" is slightly less than that for the overall peer group mean ("D"). However, for service span, Tri-Rail has a higher LOS ("B") than the peer group mean.

Table 5-3
2002 Frequency and Hours of Service LOS*

Peer Group (Commuter Rail)	Frequency LOS	Hours of Service LOS
ACE (Stockton-San Jose)	F	E
Sounder (Seattle)	E	F
Metrolink (Los Angeles)*	E	D
MARC (Baltimore)*	E	D
Coaster (San Diego)	D	D
VRE (Northern Virginia)*	C	D
Caltrain (San Jose-San Francisco)	C	A
TRE (Dallas-Ft. Worth)	C	B
Tri-Rail (SFRTA)	E	B
Peer Mean	E	D

LOS values represent weekday conditions.
***Weighted average of hours for all routes used.*

5.3 Feeder Bus Level of Service

Table 5-4 summarizes the 2002 average service frequency LOS for the SFRTA feeder bus system and its relation to the selected peer group of other bus services. The LOS for each measure was estimated using the guidelines provided in the TCQSM. It is expected that the service frequency LOS associated with the existing SFRTA feeder bus services ("E") would be fairly low given the limited service currently operated by Tri-Rail.

Table 5-5 identifies the hours of service LOS associated with specific existing SFRTA feeder bus routes in Broward County. Most routes operate at LOS "E", with three routes operating at "C" and two routes at "F".

Table 5-4
2002 Service Frequency LOS

PEER GROUP	Frequency LOS
NCTD	E
PalmTran	E
Broward County Transit	D
Pierce Transit	D
SamTrans	C
Miami-Dade Transit	B
SFRTA	E
Peer Mean	D

LOS values represent weekday conditions

Table 5-5
SFRTA Feeder Bus Hours of Service LOS

SFRTA Feeder Bus*	Hours of Service LOS
Deerfield Beach Route 1	E
Deerfield Beach Route 2	E
Pompano Beach	E
Cypress Creek Route CC1	E
Cypress Creek Route CC2	E
Cypress Creek Route CC3	E
Fort Lauderdale Route FL1	C
Fort Lauderdale Route FL2	E
SFEC Route 1	E
SFEC Route 2	E
Ft Lauderdale/Hollywood Int. Airport Route FLA1	C
Ft Lauderdale/Hollywood Int. Airport Route FLA2	F
Ft Lauderdale/Hollywood Int. Airport Route FLA Weekend	C
Ft Lauderdale/Hollywood Int. Airport Route FLA Saturday	F
Sheridan Street Route SS1	E
City Cruiser Weekend	C
T-Rex	E

Results only reflect the LOS for feeder bus services within Broward County. Feeder bus service to Tri-Rail within Palm Beach Miami-Dade County is provided separately within each County's transit service.

6. DEVELOPMENT OF FIVE-YEAR ALTERNATIVES LIST

6.1 Introduction

The previous chapter provided a comparative peer review of Tri-Rail's system performance. This chapter provides a review of the various projects that have been identified by the public, SFRTA, and other local agencies. The projects are intended to improve the Tri-Rail's system performance and set forth the necessary projects to achieve the goals and objectives stated in Chapter 1. The intent of each project is to increase service frequency, reliability, customer convenience and comfort. This includes the introduction of new routes, route extensions, new infrastructure, ongoing planning elements, and coordination with other agency plans.

6.2 Project Identification Process

6.2.1 Review of Unmet Needs Assessment

The first step that was taken in the determination of unmet transit needs was to establish a bench mark for current Tri-Rail users. This was accomplished by using surveys that were conducted to determine the greatest transit needs of the current Tri-Rail riders. The following represents a review of the transit needs identified from the survey.

- Reliable on-time service for commuting to work and school
- More frequent headways on the train, shuttles and feeder bus service
- More frequent transit service on Saturdays and Sundays
- Trains running later in the evenings
- Better coordination between the routes, schedules and customer service between the various transit agencies
- Ability to make direct transit trips between major Broward locations and downtown Miami
- Run trains during the mid-day
- Extend Tri-Rail service to Jupiter on the north and Homestead on the south

6.2.2 Input from SFRTA Staff

Input from the RTA staff was given throughout the development of the 5-year alternative project list. Team meetings were held to discuss the existing and future needs of the SFRTA staff. This included staff meetings with the planning, finance, engineering, operations and marketing departments at which each department expressed their needs and project desires to make the Tri-Rail system more viable.

6.2.3 Public Input

As part of the needs identification process, 8 public meetings where held to gather input from the public to understand Tri-Rail's system performance from the users point of view. As a result of the public meetings, the following Tri-Rail facility, train, and feeder bus related suggestions were collected from the public involvement process. Passengers recommended that the SFRTA:

Tri-Rail Facility and Train Recommendations:

- Increase security at stations and on trains
- Provide additional parking at stations

- Provide more amenities at stations including bathrooms, drinking fountains, vending machines, bench seating and shelters
- Provide enhanced user information services including bilingual services
- Provide a station in Oakland Park
- Provide handicap friendly facilities at the Hollywood and Cypress Creek Stations
- Provide additional trains in peak hour and reduce headway between trains
- Extend Tri-Rail to Homestead, Scripps area, Palmetto, Jupiter and Kendall
- Coordinate Tri-Rail with Metrorail and shuttle bus schedules
- Expand weekday and weekend service hours and employ more station attendants
- Reduce Tri-Rail delay caused by CSX freight trains
- Sell annual passes and sell tickets on trains

Shuttle Bus Recommendations:

- Add additional buses between Hollywood Station and Downtown Hollywood
- Expand the Deerfield Beach shuttle service area
- Coordinate Tri-Rail with Pompano Beach and Delray Beach shuttles
- Extend weekend and weekday hours
- Improve coordination of shuttles and each County's Transit System
- Increase frequency of shuttles that serve Deerfield Beach, West Palm Beach Airport and the Fort Lauderdale Airport
- Provide enhanced user information services including bilingual services
- Provide shuttle connections to various South Florida Colleges
- Provide shuttles that serve Broward General and Miami Beach

6.2.4 Public Meeting

A public meeting was held on April 19, 2005 at 6:00 pm to review the projects recommended for implementation within the TDP. The comments received supported the projects recommended below. No negative comments were received regarding any of the planned improvements.

6.2.5 Relationship to SFRTA Goals and Objectives

The goals and objectives listed in Chapter 1 and the 5-year alternatives are directly related and have been closely coordinated. The goals and objectives serve as the framework for establishing Tri-Rail as a viable form of public transportation. The 5-year alternatives are based on the initiatives set forth in the goals and objectives. This provides the necessary means to achieve the stated goals and objectives. In addition, goals and objectives are also a reflection of unmeet needs and visions set for by both the public and SFRTA staff.

6.3 Proposed Transit Operational and Capital Projects

6.3.1 Overview

The following table presents the programmed and proposed projects for the fiscal years 2006-2010 and several long-term projects that are identified in other local agency's plans.

Table 6-1
Five-Year Project Alternatives List

PROGRAMMED AND PROPOSED PROJECTS	FY 05/06	FY 06/07	FY 07/08	FY 08/09	FY 09/10	SFRTA Goal	Source
Operations							
Phase B Implementation (operations and management projects)	√	√	√			1,2	TIP Funded
Begin operating 48 train schedule	√	√				2,5	TIP Funded
Additional Shuttle Service Between West Palm Beach to PBIA	√					2,5	FDOT Feeder Bus Plan
Additional Shuttle Service from Park of Commerce from Boca Raton Station	√					2,5	FDOT Feeder Bus Plan
Additional Service to Meet new Headways on Boca Center Shuttle	√					2,5	FDOT Feeder Bus Plan
Additional Shuttle Service and Merge Deerfield Routes 1 & 2 to Meet New Headways	√					2,5	FDOT Feeder Bus Plan
Additional Shuttle Service for West Palm Beach route to meet New Headways	√					2,5	FDOT Feeder Bus Plan
Additional Shuttle Service to Meet New Headways at Cypress Creek	√					2,5	FDOT Feeder Bus Plan
Additional Shuttle Service to Meet New Headways on Ft Lauderdale Airport Shuttle	√	√				2,5	FDOT Feeder Bus Plan
Additional Shuttle Service to Meet New Headways on the SF Education Center Bus	√					2,5	FDOT Feeder Bus Plan
Smart Card Ticket Integration			√			1,2,5	
Advanced Public Transportation Systems (communications & security/safety)	√					2,5	TIP Funded
Extend 20-min Operation to Shoulders		√		√		2,5	
Maintenance							
Rehab and Overhaul Fleet	√	√				1	TIP Funded
North Storage & Crew Facilities			√	√		2	
Rolling Stock Spare Parts	√	√	√			1,2	TIP Funded
Hialeah Yard/Layover Facility		√				1,2	TIP Unfunded
New Train Wash		√				2	
Capital							
Segment 5 – Double Tracking Project	√					2,5	TIP Funded
Parking Improvements at 79th Street Station	√	√				2,5	TIP Funded
79th Street Station Metrorail Connection	√	√				2,5	
Scripps Project				√	√	2,5	Capital Budget
Jupiter Extension				√	√	2,5	TIP Funded
New River Bridge	√	√				2	TIP Funded

Table 6-1 (Continued)
Five-Year Project Alternatives List

PROGRAMMED AND PROPOSED PROJECTS	FY 05/06	FY 06/07	FY 07/08	FY 08/09	FY 09/10	SFRTA Goal	Source
Capital							
Cypress Creek Intermodal Center	√	√	√			2,5	TIP Funded
Upgrade Pompano Beach Station	√	√				2,5	TIP Unfunded
Access Improvements at Boca Raton, Hillsboro, and Boynton Beach Stations			√			2,5	
West Palm Beach & Boca Intermodal Facilities	√	√				2,5	
Ped Overpasses at the Golden Glades, Deerfield Beach & Ft. Airport Stations	√	√	√			2,5	TIP Unfunded
Acquire 3 Locomotives, 3 Cab Cars, and 2 Coaches	√					2	TIP Funded
Smart Card Ticket Vending Machines		√	√				TIP Funded
Planning							
BRT on Okeechobee Blvd in West Palm Beach	√	√				2,5	TIP Funded
Scripps Extension Feasibility Study	√	√				2,3	TIP Funded
State Road 7 Rapid Bus Program	√	√				2,3	TIP Funded

6.3.2 System Performance

The overall system performance of a transit system can be characterized by its ability to serve passengers in what is perceived as a comfortable and convenient manner. One of the primary goals and objectives of the SFRTA is to increase Tri-Rail's system performance. To achieve this goal, the SFRTA has programmed and proposed improvements to increase the service frequency, reliability, and ultimately the comfort and convenience for passengers.

6.3.3 New Routes and Route Extensions

New routes, extended routes, additional shuttle buses, and the double tracking project all have been identified to help improve the service frequency of the Tri-Rail system. Tri-Rail is in the construction phase of double-tracking its rail line, which will reduce the train headways to 20-minutes starting in the 2005/2006 fiscal year. To compliment the rail enhancement, shuttle buses feeding Tri-Rail will also have increased service frequencies with headways that match the 20-minute intervals. This will be achieved by providing additional buses along key routes serving Tri-Rail, including shuttle buses serving: the West Palm Beach, Boca Raton, Deerfield Beach, Cypress Creek, and Fort Lauderdale Stations.

In addition, Bus Rapid Transit (BRT) alternatives are proposed along Okeechobee Blvd. in Palm Beach County to provide more efficient transit options that serve Tri-Rail. Similarly, Broward County has proposed BRT shuttles that will serve Tri-Rail as part of their Long Range Transportation Plan initiatives.

6.3.4 Maintenance Projects

Tri-Rail's system operation is heavily dependant upon SFRTA's ability to keep vehicles in good condition. Several

critical maintenance initiatives and service facilities have been identified to keep the Tri-Rail service operational. They include:

- A rehab and overhaul of the existing vehicle fleet including spare parts
- Storage facilities at the North Yard and Hialeah Yard
- Maintenance and Layover/Crew facilities
- A new train wash facility

6.3.5 Infrastructure

A key goal and objective of the SFRTA is to expand the services provided by Tri-Rail. The physical infrastructure supporting Tri-Rail is a key determinate in the SFRTA's ability to expand and improve system performance. The key infrastructure deficiencies identified include a lack of Intermodal facilities, parking at stations, maintenance and storage facilities, station accessibility, and rail corridors served by Tri-Rail.

- Intermodal Facilities at the West Palm Beach, Cypress Creek and Boca Raton Stations
- Parking availability
- Parking Improvements at west lot of Cypress Creek
- Upgrade Pompano Beach Station
- Maintenance, storage, and layover facilities
- Fort Lauderdale Airport Station Overpass
- New River Bridge
- Golden Glades Station Overpass
- Double-tracking
- Jupiter Extension

6.3.6 Ongoing Planning Elements

There are also three important on-going transit-planning efforts in the SFRTA service area, which could result in added potential facilities and services involving SFRTA operation.

- FEC Corridor Alternatives Analysis - Palm Beach, Broward and Miami-Dade Counties
- Broward East-West Light Rail Transit - Sawgrass Mills to Hollywood/Ft. Lauderdale International Airport
- Rail extensions to the City of Jupiter, the FEC Corridor and the proposed Scripps

The FEC Corridor Alternatives Analysis involves assessing potential transit improvements along the FEC Corridor, including assessing the feasibility of added commuter rail service, light rail service, or premium bus rapid transit or express bus service. SFRTA is a potential development and operating agency associated with these potential transit improvements.

Rail Station Accessibility

Station accessibility is an important part of providing an efficient and effective system. The SFRTA continuously seeks opportunities to increase the access and mobility of passengers to and from its rail stations.

- Vehicle accessibility to stations at Boca Raton, Deerfield Beach, and Boynton Beach Station
- Improved transit accessibility to stations at Hollywood, Cypress Creek and Deerfield Beach

Rail Station Security

One of the most important goals for the SFRTA is to provide a safe transportation system and environment. Providing a safe environment for Tri-Rail passengers is not only the public duty of SFRTA, but it is critical for improving ridership. Although the perception of what is safe can be subjective, Tri-Rail continuously seeks opportunities to improve how the public views their safety within the system.

- Advanced Public Transportation Systems for security and safety including audio and visual monitoring on the train and in the stations.

Innovative Technology

Technology is an extremely dynamic industry, thus the SFRTA continuously seeks opportunities to implement innovative technologies into new projects. One such opportunity is using smart cards. Smart cards will provide passengers with enhanced access and mobility within the Tri-Rail system. Similar to the use of APTS for safety and security purposes, it is also being utilized for operational communications and fleet management. This will improve Tri-Rail's operational performance.

- Smart Cards
- Advanced Public Transportation Systems for communication and fleet management

6.4 Coordination with Other Agency Plans

The timing and coordination of the Tri-Rail system with other local transit systems is a critical part of improving the overall service performance. The projects listed within the 5-year alternatives list has considered the projects that have been proposed in other local transportation related plans. In addition, the SFRTA plans to continually coordinate Tri-Rail schedules with other local transit services to help prevent unneeded delays and improve the connectivity among the various transit options in South Florida.

During the development of both the Broward County Transit (BCT) and the Palm Tran TDP service improvements were developed to assure that all of the Tri-Rail stations in Broward and Palm Beach Counties would be adequately served when double tracking is complete and the new service headways are initiated.

During the development of the SFRTA TDP, presentations have been given to the SFRTA Board, the SFRTA Planning Technical Advisory Committee (PTAC), the SFRTA Operations Technical Advisory Committee, and the ADA Advisory Committee. The committee structure provides coordination with the following agencies.

SFRTA Board

- Miami-Dade Board of County Commissioners
- Broward Board of County Commissioners
- Palm Beach Board of County Commissioners
- Governor's Office
- FDOT District 6

Planning Technical Advisory Committee

- Miami-Dade Transit
- Miami-Dade MPO
- Broward County Transit
- Broward MPO
- Palm Tran

- Palm Beach MPO
- South Florida Regional Planning Council
- FDOT District 6
- FDOT District 4
- Treasure Coast Regional Planning Council

Operations Technical Advisory Committee

- FDOT District 4
- FDOT District 6
- Palm Tran
- Broward County Transit
- Miami-Dade Transit
- AMTRAK
- CSX
- FEC
- Palm Beach County School District
- South Florida Education Center TMA
- Downtown Ft. Lauderdale TMA

ADA Advisory Committee

- Palm Beach Office of Equal Opportunity
- Broward County Office of Equal Opportunity
- Miami-Dade Office of ADA Coordination
- Palm Beach National Federation of the Blind
- Broward Local Coordinating Board
- Town Center Commercial Residential District Dade County
- Palm Beach MPO
- Broward MPO
- Miami-Dade MPO
- Palm Tran
- Broward County Transit
- Miami-Dade Transit

Regional Workforce Development Boards

- Workforce Alliance, Inc. Palm Beach County
- Work Force One, Broward County
- Dade Workforce, Miami-Dade County

7. MANAGEMENT, OPERATIONS AND CAPITAL PLAN

7.1 Management

The management plan addresses SFRTA's managerial approach to the design and operation of Tri-Rail. The management plan includes the business plan, the marketing plan and the monitoring program to track performance.

7.1.1 Operating Plan

The commuter rail service operates on a morning and afternoon clock-face schedule, meaning that trains arrive at a station at the same time each hour. Tri-Rail operates 15 round trips on weekdays, 7 round trips on Saturdays and 6 round trips on Sundays. The current operating schedule is shown in Table 7-1.

Table 7-1
2004-2005 OPERATING SCHEDULE

Southbound Trains			Northbound Trains		
Train	Mangonia Park	MIA	Train	MIA	Mangonia Park
601	4:20 AM	6:19 AM	600	4:13 AM	6:12 AM
603	5:40 AM	7:39 AM	602	5:13 AM	7:12 AM
605	6:40 AM	8:39 AM	604	5:43 AM	7:44 AM
607	7:40 AM	9:39 AM	606	6:13 AM	8:12 AM
609	8:40 AM	10:39 AM	608	7:13 AM	9:12 AM
611	9:40 AM	11:39 AM	610	8:13 AM	10:12 AM
613	10:40 AM	112:39 PM	612	9:13 AM	11:12 AM
615	1:56 PM	3:55 PM	614	10:13 AM	12:12 PM
617	2:56 PM	4:55 PM	616	11:13 AM	1:12 PM
619	3:26 PM	5:25 PM	618	1:29 PM	3:28 PM
621	3:56 PM	5:55 PM	620	3:29 PM	5:28 PM
623	4:56 PM	6:55 PM	622	4:29 PM	6:28 PM
625	5:56 PM	7:55 PM	624	5:29 PM	7:28 PM
621	6:56 PM	8:55 PM	620	6:29 PM	8:28 PM
621	7:56 PM	9:55 PM	620	7:29 PM	9:28 PM

A full 71.7 mile one way trip is completed in one hour and 59 minutes; the round trip takes 4 hours and 26 minutes including layover and recovery time. The standard train operates in a push-pull configuration, with a diesel locomotive, two coach cars and a cab car. During peak periods up to two additional coach cars can be added to the train set to accommodate seated loads. The average running speed is 35.5 miles per hour and the average station spacing is 3.9 miles.

Transit feeder service to Tri-Rail stations is provided by a combination of service by the three local county operators - MDT, BCT and Palm Tran and by shuttles operated directly by Tri-Rail. Within the counties various operational agreements exist but basically SFRTA provides funding to the local transit agencies to either serve Tri-Rail stations as an additional stop on an existing route or to operate shuttle service oriented to directly serve a Tri-Rail station. As a part of the agreement passengers transferring from the County buses are entitled to a reduced train fare Tri-Rail passengers are entitled to transfers to the local bus service within a quarter mile of the Tri-Rail stations. In Palm Beach County almost all of the service is provided by regular PalmTran routes. In Broward County roughly half of the service to the Tri-Rail stations is supplied by regular BCT routes, while the other half of the

service is supplied directly by Tri-Rail shuttles. In Miami-Dade County the service is mostly operated by MDT with only a couple of Tri-Rail Shuttles in operation. SFRTA transfers $666,660 annually to each county to operate Tri-Rail feeder routes. Table 7-2 lists the Tri-Rail shuttle bus routes.

Table 7-2
SHUTTLE BUS ROUTES

Route	Station	Route	Station
36 ST	Hialeah Market	DFB2	Deerfield Beach
MIA	Miami Airport	PB1	Pompano Beach
SFEC	FLA	CC1	Cypress Creek
FLTMA	Ft. Lauderdale	CC2	Cypress Creek
SHE	Sheridan Street	CC3	Cypress Creek
Boca Center	Boca Raton	FtL	Fort Lauderdale
T-Rex	Boca Raton	FLA	FLA
DFB1	Deerfield Beach		

With the completion of double tracking in March 2006 Tri-Rail will begin operating 48 trains per day on the following schedule.

Table 7-3
DOUBLE TRACKING OPERATING SCHEDULE

Southbound		Northbound	
Leave Mangonia Park	Arrive Miami	Leave Miami	Arrive Mangonia Park
4:30 AM	6:11 AM	4:38 AM	6:19 AM
5:00 AM	6:41 AM	5:08 AM	6:49 AM
5:30 AM	7:04 AM	5:38 AM	7:12 AM
6:00 AM	7:41 AM	5:58 AM	7:39 AM
6:25 AM	7:59 AM	6:18 AM	7:52 AM
6:45 AM	8:26 AM	6:38 AM	8:19 AM
7:05 AM	8:39 AM	7:00 AM	8:34 AM
7:30 AM	9:11 AM	7:18 AM	8:59 AM
8:00 AM	9:41 AM	8:00 AM	9:41 AM
9:00 AM	10:41 AM	9:00 AM	10:41 AM
10:00 AM	11:41 AM	10:00 AM	11:41 AM
11:00 AM	12:41 PM	11:00 AM	12:41 PM
12:00 PM	1:41 PM	12:00 PM	1:41 PM
1:00 PM	2:41 PM	1:00 PM	2:41 PM
2:00 PM	3:41 PM	2:00 PM	3:41 PM
3:05 PM	4:46 PM	3:00 PM	4:41 PM
4:11 PM	5:52 PM	4:00 PM	5:41 PM
4:32 PM	6:06 PM	4:40 PM	6:14 PM
4:52 PM	6:33 PM	5:00 PM	6:41 PM
5:12 PM	6:46 PM	5:20 PM	6:59 PM
5:32 PM	7:13 PM	5:40 PM	7:21 PM
6:02 PM	7:36 PM	6:20 PM	7:59 PM
6:32 PM	8:13 PM	6:40 PM	8:21 PM
7:30 PM	9:11 PM	7:40 PM	9:21 PM

The frequency of shuttle bus operations will be increased to more closely match the frequency of the train schedule. In all cases shuttle frequency will be increased to either 20 minute or 30 minute frequencies.

Tri-Rail and PalmTran and BCT will work together to pursue 20 to 30 minute peak period service on all line haul service to Tri-Rail stations with the goal of scheduling a bus within ten minutes of any peak period Tri-Rail train.

7.1.2 Marketing Plan

The SFRTA marketing plan recognizes the cross-linkage between the bus and the rail system in delivering better transit service. The marketing plan is designed to show the public that Tri-Rail is a reliable, efficient and cost-effective way for residents and visitors to access work, school, major airports and popular attractions. However, given the on-going construction for the double tracking, SFRTA has not conducted a concerted marketing program to attract new riders. The marketing plan has correctly targeted the preservation of current riders during the construction, looking forward to a huge marketing campaign geared toward attracting new riders just prior to the completion of the double tracking.

This year's marketing plan focused on rising gas prices, the SFRTA commitment to the community and its positive influence on the area's diverse population, economy, and environment. The plan includes events at the opening of new and remodeled stations, including Golden Glades, Sheridan Street, Fort Lauderdale, Boca Raton, Lake Worth, West Palm Beach and Mangonia Park stations. The plan also has a focus on building a partnership with local companies and business organizations to develop new markets. The plan includes its own monitoring program that includes tracking of ridership, employers joining the EDP program, shuttle bus ridership, 1-800 calls, website hits, and event attendance.

7.1.3 Monitoring Program

SFRTA has an extensive program of monthly monitoring through their monthly operations report. Historical data has been maintained facilitating assessment of growth and trend changes. The following data is maintained on a monthly basis: monthly boardings, average weekday boardings, passengers per day, total trains, passengers per train, train miles operated, passengers per mile, fare revenue, average fare, system usage by county, boardings and alightings by station by direction, and ridership by train. The same data is collected on all contracted shuttle bus service. This data provides all of the necessary data to track the program. The monthly operations report is available to SFRTA committees and to the public. SFRTA also collects data as part of the reporting process organized though the Federal Transit Administration's National Transit Database.

7.2 Current Budget

The total SFRTA budget for FY 2004-05 is about $178 million. The majority of that budget is the capital budget. The capital budget is balanced at $143 million in revenues and expenses. Over two-thirds of the budget is for the construction of the Segment 5-Double Tracking Project, which is slated for completion by March 2006. Table 7-4 provides the details of the capital budget.

Table 7-4
2004-05 Capital Budget

Revenue		Expenses	
Source	Budget	Project	Budget
FTA Section 5307	$9,521,000	New River Bridge	$19, 621,000
FTA Section 5309	$7,717,000	Segment 5 Project	$91,400,000
FFGA Segment 5 Project	$10,360,000	Cypress Creek Operations Center	$4,200,000
STP Funds (Segment 5 Project)	$17,500,000	Ticket Vending Machines	$2,200,000
Homeland Security	$800,000	Misc. Station Renovation	$100,000
FDOT JPA Segment 5 Project	$11,000,000	Office Equipment	$40,000
FDOT JPA New River	$3,428,000	Feeder Service Subsidy	$2,000,000
FDOT JPA Feeder Service	$2,000,000	Planning Department	$3,221,000
FDOT JPA DMU	$4,748,000	Preventive Maintenance	$4,197,000
FDOT JPA Pompano Station Parking	$150,000	Rolling Stock	$1,400,000
SFRTA funds Pompano Station Parking	$150,000	Autos	$60,000
Broward Contribution	$2,670,000	DMU Rail Project	$4,748,000
Palm Beach Contribution	$2,670,000	Urban Security Initiative	$800,000
Miami-Dade Contribution	$2,670,000	Pompano Station Parking	$300,000
SIB Loan	$7,500,000	MIC Project	$500,000
CSX Funds (Segment 5)	$1,000,000	External Signage	$550,000
Carryover Funds	$59,463,000	County Capital Contribution	
Total	$143,347,000	Broward Projects	$2,670,000
		Miami-Dade Projects	$2,670,000
		Palm Beach Projects	$2,670,000
		Total	$143,347,000

The 2004-05 SFRTA operating budget is balanced at $34.8 million in revenues and expenses. Revenues are comprised of $7.4 million in train revenues and $27.4 million in operating assistance. The majority of SFRTA expenses are represented by operating Tri-Rail, the feeder bus system, and the provision of security. Table 7-5 provides the details of the current SFRTA operating budget.

Table 7-5
2004-05 Operating Budget

Revenues		Expenses	
Source	Budget	Category	Budget
Train Revenue	$7,262,000	Train Operation Contract	$13,064,000
Other Income	$153,000	Additional Train Service	$943,000
Advertising	$20,000	Feeder Service	$2,966,100
FTA-Planning Grant	$942,000	Security Contract	$2,897,000
FTA-Preventive Maintenance	$5,676,886	Insurance	$1,650,000
FTA-Station Maintenance	$370,000	Train Fuel Contract	2,507,000
FHWA	$4,000,000	Dispatchers	$247,000
FDOT JPA- Operating	$6,619,000	Station Utilities	$285,000
FDOT JPA-Feeder Service	$2,000,000	Revenue Collection	$345,000
FDOT JPA-DMU Funding	$528,000	1-800 Charges	$49,000
FRA-Tel Demonstration	$150,000	Marketing	$919,000
Miami-Dade Operating	$2,206,333	Personnel	$6,775,800
Broward Operating	$2,206,333	Seminars/Training	$129,000
Palm Beach Operating	$2,206,333	Travel/Conferences	$109,000
Broward Feeder Service	$535,314	Professional Fees	$910,000
Other Local Funding	$145,000	Other Expenses	$833,300
Transfer to Capital Program	($150,000)	Office Rent	$429,000
Total	$34,870,200	Reserve	$500,000
		Transfer to Capital Program	($688,700)
		Total	$34,870,200

7.3 Five-Year Budget

The five year SRTA budget was developed based upon their existing budget documents and their existing Transportation Improvement Program. Table 7-6 reflects the SFRTA 2004-005 Capital Budget and Projected Five Year-Capital Plan. The tables were modified to reflect input from various SFRTA staff and to reflect the results of the FDOT Feeder Bus Needs Plan. Table 7-7 reflects the Capital needs for the SFRTA separated between funded and unfunded projects.

Table 7-6
Projected SFRTA 5-Year Capital Revenues

SOURCE	FY 2005-06	FY 2006-07	FY 2007-08	FY 2008-09	FY 2009-10	Total
Section 5307	$30,350,172	$8,273,000	$8,347,000	$8,550,000	$8,675,000	$64,195,172
Section 5309 rail mod	$8, 503,344	$6,515,000	$6,650,000	$6,718,000	$6,700,000	$35,086,344
Dade STP Funds	$7,750,000	0	0	0	0	$7,750,000
Broward STP Funds	$10,500,000	$3,375,000	0	0	0	$13,875,000
Palm Beach STP Funds	$6,750,000		0			$6,750,000
Palm Beach MPO	0			$1,500,000	$1,500,000	$3,000,000
CMAQ (Smart Card)	$285,927					$285,927
Florida DCA	$725,000					$725,000
County Capital Contribution	$24,030,000	$8,010,000	$8,010,000	$8,010,000		$48,060,000
Hertz Settlement	$700,000					$700,000
Private Sector Funding	$6,000,000					$6,000,000
FDOT JPA: New River	$37,650,000					$37,650,000
FDOT JPA: Segment 5	$3,409,780	$2,625,000				$6,034,780
FDOT JPA: DMU	$14,392,787					$14,392,787
FDOT JPA: Pompano Station Parking	$181,756					$181,756
TOTAL	$151,228,776	$33,298,000	$23,007,000	$24,739,000	$16,750,000	$249,022,776

Table 7-7
SFRTA 5-Year Capital Expenditures

	FY 2005-06	FY 2006-07	FY 2007-08	FY 2008-09	FY 2009-10	Total
Budgeted Projects						
Segment 5-FFGA	$38,185,000	$10,500,000				$48,685,000
New River Bridge	$37,650,000					$37,650,000
Rolling Stock	$1,500,000	$1,650,000	$1,050,000		$1,000,000	$5,200,000
Ticket Vending Machines	$6,285,9290	$2,115,000	$3,000,000			$11,400,929
Smart Card Integration	$1,062,626		220,000	$718,000		$2,000,000
Upgrade Pompano Beach Station			$1,000,000			$1,000,000
Ft. Lauderdale Access Improvements				$821,000		
Jupiter Extension				$1,500,000	$1,500,000	$3,000,000
Misc. Station Rehabilitation				$400,000	$500,000	$900,000
Signing	$231,491					$231,491
Cypress Creek Admin. Bldg.	$6,418,503	$2,805,000	$1,554,000	$1,436,000		$12,213,503
Boca Intermodal Center	$9,000,000					$9,000,000
DMU Purchase	$14,392,787					$14,392,787
Rolling Stock Rehab & Spare Parts	$2,384,027			$900,000	$600,000	$3,884,027
Pompano Beach Parking	$900,000					$900,000
Golden Glades		$250,000				$250,000
Planning & Capital Development	$10,852,181	$3,418,000	$3,521,000	$5,000,000	$5,500,000	$28,291,181
Preventative Maintenance	$8,542,408	$4,500,000	$4,552,000	$6,000,000	$7,000,000	$30,594,408
Regional Projects	$24,030,000	$8,010,000	$8,010,000	$8,010,000		$48,060,000
Other costs	$1,290,721	$300,000	$50,000	$375,000	$100,000	$1,775,721
Total Funded Projects	$151,228,776	$33,298,000	$23,007,000	$24,739,000	$16,750,000	$249,022,776

Table 7-7 (Continued)
SFRTA 5-Year Capital Expenditures

Unfunded Projects						
Phase B Implementation	$2,000,000					$2,000,000
Crew Facilities at North layover	$3,200,000					$3,200,000
79th Street Station Metrorail Connection	$2,000,000					$2,000,000
West Palm Beach Intermodal Center					$16,000,000	$16,000,000
Deerfield Beach Station Overpass				$2,000,000		$2,000,000
Fort Lauderdale Airport Station Pedestrian Overpass	$1,000,000	$1,000,000				$2,000,000
Access at Boca Raton Station			$250,000			$250,000
Access at Hillsboro Station			$250,000			$250,000
Access at Boynton Beach			$250,000			$250,000
West Lot at Cypress Creek			$310,000			$310,000
Hialeah Yard/Layover Facility		$250,000				$250,000
New train wash		$500,000				$500,000
Okeechobee BRT		$6,000,000	$6,000,000			$12,000,000
Scripps Extension			$40,000,000	$60,000,000	$60,000,000	$160,000,000
TOTAL Unfunded Projects	$8,200,000	$8,750,000	$47,060,000	$62,000,000	$76,000,000	$201,010,000

Table 7-8
SFRTA 5-Year Operating Revenue

	FY 2005-06	FY 2006-07	FY 2007-08	FY 2008-09	FY 2009-10	Total
Operating Revenue						
Passenger Revenue	$6,529,000	$9,085,985	$9,506,961	$9,982,309	$10,481,425	$45,585,680
Advertising & Other	$320,000	$320,000	$329,600	$339,488	$349,673	$1,658,761
FDOT Operating JPA	$6,819,000	$12,477,000	$12,852,000	$12,987,000	$12,987,000	$58,512,000
FDOT DMU JPA	$1,649,578					$1,649,578
FDOT Marketing JPA	$141,000					$141,000
State Transit Block Grant		$469,000	$469,000	$469,000	$469,000	$1,876,000
FHWA	$4,000,000	$4,000,000	$4,000,000	$4,000,000	$4,000,000	$20,000,000
FTA	$8,053,953	$4,148,000	$4,462,000	$5,274,943	$6,388,954	$28,327,850
FTA Program Support	$1,079,163	$1,116,934	$1,156,026	$1,196,487	$1,238,364	$5,786,974
Miami-Dade County	$2,273,000	$4,159,000	$4,284,000	$4,329,000	$4,329,000	$19,374,000
Broward County	$2,273,000	$4,159,000	$4,284,000	$4,329,000	$4,329,000	$19,374,000
Palm Beach County	$2,273,000	$4,159,000	$4,284,000	$4,329,000	$4,329,000	$19,374,000
Broward Feeder	$606,294	$624,483	$643,217	$662,514	$682,389	$3,218,897
FDOT Feeder Service	$2,000,000	$2,000,000	$2,000,000	$200,000	$200,000	$10,000,000
Service Development Program		$619,000	$637,000	$656,000		$1,912,000
Other Local Funding	$569,800	$586,894	$604,501	$622,636	$641,315	$3,025,146
TOTAL	$38,586,788	$47,455,296	$49,043,306	$50,708,377	$51,756,120	$237,549,887

Table 7-9
SFRTA 5-Year Operating Expenses

	FY 2005-06	FY 2006-07	FY 2007-08	FY 2008-09	FY 2009-10	Total
Base Operating and Maintenance Costs	$36,328,788	$37,600,296	$38,916,306	$40,278,377	$41,688,120	$194,811,887
Cost of additional service	$2,258,000	$9,236,000	$9,490,000	$9,7774,000	$10,068,000	$128,826,000
Funded Operating and Maintenance Cost	$38,586,788	$46,836,296	$48,406,306	$50,052,377	$51,756,120	$323,637,887
Unfunded Operating and Maintenance Costs						
Phase B Operations		$12,298,000	$12,669,000	13,047,000	13,438,000	$51,452,000
Smart Card System			$10,000,000	$10,000,000	$10,000,000	$30,000,000
Total Unfunded		$12,298,000	$22,669,000	$23,047,000	$23,438,000	$81,452,000

7.4 Unfunded Projects

Within the 5-Year Capital Budget there are several important projects that stand out as unfunded - Smart Card Implementation, the Scripps Extension, expansion of the shuttle bus service, modifications to stations to improve pedestrian and vehicular access and the West Palm Beach Intermodal Center. It would appear that these projects could be likely candidates for SIS funding.

Within the 5-Year Operating Budget it appears that the operating cost of implementing the Phase B Project and the region-wide Smart Card system can not be supported under current funding forecasts. The operating short fall over the life of the TDP is about $81 million if these two projects are implemented. These two projects would appear to rate very highly in the TRIP rating system to qualify for funding.

The Smart Card project will affect Miami-Dade Transit, Broward County Transit and PalmTran, as well as Tri-Rail. If TRIP funding is not appropriated for the installation and operations of the Smart Card system, the project should be paid for proportionately by each County or transit agency.

7.5 Funding the TDP

The projects identified in the TDP have all been identified in the SFRTA's Full Funding Grant Agreement (FFGA), other SFRTA studies and various county Long Range Transportation Plans. Resources for projects come through a series of funding sources. Not every project listed in this TDP is funded in FY 04-05.

7.5.1 Federal Funding Sources

The legislature has passed Surface Transportation Extension Act of 2005 and is still considering the successor of TEA-21, the Safe, Accountable, Flexible, and Efficient Transportation Act of 2005 (SAFETEA). This legislation authorizes transit funding through 2009. Below is a summary of Federal funding programs emanating from this legislation that can be used for transit.

Direct Transit Funding

- Job Access and Reverse Commute Grants are available to provide a transit connection between areas with heavy concentrations of welfare recipients and suburban job markets. This is discretionary money and grants are reserved for capital and operating costs under limited conditions.
- Transit Enhancements is a 1% set aside for projects that enhance transit facilities in urbanized areas over 200,000 population
- Clean Fuel Formula Grant funds are available to transit operators to convert equipment to cleaner fuels.
- Urbanized Area Formula Grant Program money is available to transit operators for capital and operating assistance. These funds only go to urbanized areas over 50,000 population.
- Transit Preventative Maintenance grants are monies that are available to transit operators that report National Transit Database information.
- Paratransit services are funded through transit operators to provide service to people with disabilities that cannot use a bus.
- Transit Capital Investment Grants and Loans provide capital for new fixed guideway systems and extensions, as well as new bus and bus facilities.
- Highway Funds passed through the State.
- Surface Transportation Program (STP) provides flexible funds through the State to local agencies for any project on any Federal-Aid highway.
- Congestion Management and Air Quality Program (CMAQ) provides flexible funds for projects in Air Quality non-attainment or maintenance areas. The project must show that it will reduce emissions. Currently South Florida is an maintenance area for ozone. South Florida will become an attainment area in 2007 and lose its eligibility for CMAQ funds. All CMAQ-funded projects must be programmed by the three MPO's by June 15, 2005 due to this program charge.

Flexible Funding

- Up to 50% of National Highway System (NHS) money may be transferred to maintenance, to STP, to CMAQ and to Bridge Replacement and Rehab programs.
- Up to 100% of the NHS money may be transferred to STP if approved by the Federal Highway Administration (FHWA) in advance.
- Up to 50% of maintenance funds can be transferred to NHS, STP, CMAQ and Bridge Programs.
- Up to 50% of the Bridge program money can be transferred to maintenance, NHS, STP and CMAQ.
- Only STP programs and CMAQ programs can be used to fund transit projects.

Section 5309 Discretionary Capital Grants and Loans

FTA concentrates on its New Starts program that supplies transit capital assistance to new fixed guideway systems and extensions to existing fixed guideway systems that meet the program criteria. This is a discretionary program and all projects must compete for funding using very specific criteria. In 2000, Tri-Rail received a Full Funding Grant Agreement (FFGA) from the FTA to complete their Double Tracking project. FTA provided a 50% grant for the project with the State and the MPO's providing the matching funds. A total of $118.7 million were received from the FTA. The FFGA covered the cost of the double tracking, station modifications, and acquisition of additional rolling stock.

Section 5307 Urbanized Area Formula Grants (49 USC 5307)

The urbanized area formula program provides assistance to urbanized areas for capital projects, planning, and mobility management, and transit enhancements. The drafted legislation included authorization of $29.2 billion through 2007.

Preventative Maintenance

Although an operating expense, "Preventative Maintenance," which is defined as all maintenance costs, is an allowable expenditure of capital funds under FTA guidelines. The FTA has no cap on the amount of formula funds that a transit agency can use for preventative maintenance. The only limits are in the amount of federal capital funds available and the total preventative maintenance expense that a transit agency actually incurs. Eligible costs include items such as rolling stock, station, and ticket vending machine maintenance.

FHWA

SFRTA has received FHWA funds as a pass through from FDOT since 1989 as a part of a traffic mitigation project. It is expected that the $4 million received annually will continue and is used to help fund the operating budget.

7.6 State and Local Funding

FDOT/Local Operating Assistance

FDOT is required under Florida State Statute 341.303 to fund up to 50% of the SFRTA net operating deficit, with the stipulation that its total contribution cannot exceed the local contribution of the three counties. The State defines net operating deficit as operating expenses less fare box (total train revenue) and any federal assistance. Each year SFRTA and FDOT enter into a JPA to match the three counties contributions. In 2004-05, FDOT provided $6.6 million, since each county provided $2.2 million.

FDOT Feeder Service Funding

FDOT has been providing $2 million annually to help offset subsidizing feeder bus operations through a JPA.

Public Transportation Service Development Program

This program was enacted by the Florida Legislature to provide initial funding for special projects. The program is selectively applied to determine whether new or innovative techniques or measures can be used to improve or expand public transit in an area. Service Development projects specifically include projects involving new technologies, services, routes, or vehicle frequencies to increase service to the riding public in a specific location or user group. Service Development projects are subject to a specified time duration, but can last no more than three years for system operations and maintenance procedures and no more than two years for marketing and technology projects.

It is expected that this grant will provide for the first three years, 50% of the cost of the expanded shuttle service associated with the new Tri-Rail schedule. These funds will expire after three years and must be made up from another source.

Strategic Intermodal System (SIS) Funds

The State of Florida has merged many of its funding programs into one large program called the Strategic Intermodal System (SIS). The SIS is made up of statewide and regionally significant facilities containing projects that move both people and goods and includes linkages that provide smooth and efficient transfers between modes and major facilities. Tri-Rail is listed as a rail connector and its stations are listed as passenger terminals (hubs). Figure 7-1 is a map of the SIS facilities that are eligible for funding.

In FY 2004-05, $100 million of STP funds was allocated to the SIS and funding focused on 36 SIS connector that were production ready. Future projects will be funded through the Department's five year work program process. Projects will need to focus on capacity and operational improvements to SIS corridors and connectors. The projects should focus on reducing bottlenecks and improving access to the hubs. For hubs, the focus is on improving the function of the hub, not increasing the size of the hub.

Projects to be funded through the SIS will be selected based on the following criteria:

- The extent to which projects meet SIS goals and objectives.
- The cost of the project and the availability of local financial contributions.
- The readiness of the project.
- The balance of quick fix, operational improvements and longer term capacity investments.
- A reasonable distribution of investment among the regions in the state.
- SIS priorities have been funded at $4.7 billion over the next ten years.

Transportation Regional Incentive Program (TRIP)

The State Legislature created the TRIP program in 2005 to improve regionally significant transportation facilities. State funds will be available in Florida to provide incentives to local governments and the private sector to help pay for projects that benefit regional travel and commerce. FDOT will pay for 50% of project costs or up to 50% of the non-federal share of project costs for public transportation facility projects. Projects should be put together by multiple MPO's, MPO's plus external counties or a multi-county regional transportation authority. To be eligible for TRIP funding an area must develop a regional transportation plan. SFRTA is one of the agencies that will eligible to receive TRIP funding. Trip is funded at the level of $1.6 billion for the first ten years.

State New Start Transit Program

New State legislation has established a budget item to fund the 50% non-federal share of FTA New Start money in metropolitan areas. The program generally requires a dedicated local funding source. The State New Start Budget is set at $709 million for the next ten years.

State Transportation Trust Fund (STTF)

The STTF is funded from several revenue sources, including state fuel taxes, vehicle licensing and registration fees, and auto rental surcharges. Fifteen percent of the fund is dedicated to transit and capital rail projects. The state issues block grants from the STTF to public transit operators. Block grants may be used for the eligible capital and operating costs of public transit providers and must be consistent with local comprehensive plans State budget estimates are for STTF funding to total $7.5 billion during the next ten years. It is estimated that SFRTA will receive $469,000 during the first year of this TDP from this source.

7.7 Potential Regional Funds

The State Legislation that created the SFRTA authorizes the levy of an annual license tax for the registration or renewal of each vehicle registered in Miami-Dade, Broward and Palm Beach Counties. The fee would be instituted upon approval of a referendum from registered voters in the counties. Variations for this funding source are being explored with the legislature.